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Lessons of Monetary Experience since the Treasury–Federal Reserve Accord
Charles F. Haywood, John M. Culbertson, Bertram F. Levin, Donald C. Miller, Elmer Wood

Papers on Business Finance
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LESSONS OF MONETARY EXPERIENCE SINCE THE TREASURY-FEDERAL RESERVE ACCORD

THE ADEQUACY OF FEDERAL RESERVE POWERS TO DISCHARGE RESPONSIBILITIES*

CHARLES F. HAYWOOD
University of Mississippi

THE TREASURY–Federal Reserve accord stands as a significant event in the evolution of Federal Reserve responsibilities in several respects. The immediate effect was to modify the Federal Reserve's responsibility for supporting the prices of government securities. More important, the accord affirmed the principle of independence of central bank policy. The accord and the events leading up to it also served the useful purpose of forcing a crystallization of opinion, both within and outside the Federal Reserve System, as to the nature and scope of Federal Reserve responsibilities.

It is easy enough to say that all that is really wrong with Federal Reserve policy is that those charged with the formulation of such policy have their heads screwed on the wrong way. With regard to the priority of relevant policy objectives and the appropriate actions to achieve these objectives, it is too much to expect everyone to be looking in the same direction. But it is rather uncharitable, and certainly unrealistic, to attribute this disparity of viewpoints to a congenital defect in the anatomy of policy-makers. One of the most important lessons of the monetary experience since the accord is that Federal Reserve authorities have faced up to their responsiility to

* This paper by Charles F. Haywood, the following papers by John M. Culbertson and Bertram F. Levin and the discussions by Donald C. Miller and Elmer Wood were presented at a meeting of the American Finance Association in Chicago on December 27, 1958. The program was under the chairmanship of Charls E. Walker, Federal Reserve Bank of Dallas.

participate in the formulation and implementation of national economic policy.

In the years since 1946, the Federal Reserve's obligation to assist in the implementation of the Employment Act has been officially acknowledged on various occasions. At the same time, stability in the general level of prices has been affirmed again and again as an objective of equal importance with full employment. In addition, the record of policy actions of the Federal Open Market Committee in recent years shows that action has been directed toward "restraining inflationary developments" and "mitigating recessionary tendencies" with a view to promoting "sustainable economic growth." Because its ambiguity may suggest the possibility of delusion, the notion of "sustainable economic growth" as a fundamental objective of Federal Reserve policy invites skepticism. But, after all, the purpose of countercyclical policy is to correct and, if possible, prevent deviations from the long-term growth trend of an economy.

Unfortunately, the compatibility of general price stability, full employment, and sustained economic growth is not at all evident. The experience since the accord has hardly served to dispel misgivings that the degree of market imperfection may be sufficient to make for serious conflict between the objectives of price stability and full employment. This experience has also underscored the obvious fact that the rate of economic expansion prevailing in any period characterized by price stability and/or full employment is not necessarily a sustainable one. Moreover, it is still an unresolved question whether price stability is consistent with the attainment of that rate of economic growth that is most nearly sustainable.

However, the question of whether Federal Reserve objectives have in fact been incompatible cannot be answered apart from the question of whether Federal Reserve policy has been efficiently implemented. Even if its objectives are completely compatible, Federal Reserve policy may fall short of achieving these objectives for several reasons: (1) the instruments of Federal Reserve policy, however well directed, may not exert decisive influence over the variables relevant to the attainment of objectives; (2) the timing of policy decisions may not be apt; (3) the speed and scale of operations may be inappropriate. An evaluation of the effectiveness of actual Federal Reserve policy requires consideration of each of these three respects in which the implementation of such policy may be deficient. As the scope of this paper, however, is restricted to the first, an evaluation of the effectiveness of Federal Reserve policy in the period since the

accord is not attempted. Rather, drawing on the experience of this period, the following discussion is concerned with the more abstract issue of whether the exercise of Federal Reserve instruments of control, however well timed and modulated, can be expected to exert a decisive influence over total spending.

The fulcrum of its policy is, of course, the Federal Reserve's ability to determine the level of reserve balances of member banks and, within statutory limits, the required reserve ratios that such balances must satisfy. As a ceiling, but not a floor, can thus be set for the volume of demand deposits of member banks, the intrinsic power of the Federal Reserve to restrain expansion of the quantity of money is somewhat greater than its intrinsic power to deal with monetary contraction. However, the actual power of the Federal Reserve in either of these respects depends upon the extent to which its intrinsic power can be effectively exploited. The experience since the accord suggests that the Federal Reserve is somewhat more free to make full use of its power to limit monetary contraction than its power to restrain monetary expansion.

Complete realization of the Federal Reserve's power to limit monetary contraction requires, of course, that the banking system use any reserve balances released through open-market operations and reductions in required reserve ratios to support a multiple expansion of bank deposits. That this multiple-expansion effect may be thwarted by the accumulation of excess reserves has frequently been cited as the fatal weakness in Federal Reserve power to limit monetary contraction. In the two easy-money periods since the accord, however, the multiple-expansion effect worked remarkably well. In the face of less intensive loan demand, the commercial banks moved aggressively to use increases in available reserves to expand their holdings of government securities. The desired effect of forestalling a contraction of the money supply was thus achieved. That one can pull on a string but not push it has often been suggested as analagous to the lack of symmetry in Federal Reserve powers to restrain monetary expansion and limit monetary contraction. It would appear, however, that some starch has been put in the Federal Reserve's string.

First of all, the Treasury sold sizable amounts of new debt during both of the easy-money episodes, and the terms of the new offerings in most instances were made attractive to the commercial banks. The creation of new money through federal deficit financing thus helped the multiple-expansion effect to work.

Moreover, the need for greater earnings to meet increasing costs

of operation has led commercial banks to pursue more aggressively a full investment policy. The incentive to accumulate excess reserves has also been much diminished by the availability of loans and investments involving little or no credit risk because of their being direct or contingent obligations of the federal government. Lenders' risk evaluations in general have probably tended to be stabilized by the actions taken by the Federal Reserve and various government agencies to mitigate recessionary tendencies.

Following the monetary debacle of the early 1930's, it was widely held that the Federal Reserve's power to halt and reverse monetary contraction would have been less inadequate if Federal Reserve action had been properly timed and modulated. The experience since the accord has shown this opinion to be well founded. A declining money supply was a prime characteristic of pre–World War II recessions, and at times such declines became a major causative, or at least strongly reinforcing, factor in cumulative recessions. The post-accord demonstrations that the apt use of open-market operations and reductions in required reserve ratios can forestall monetary contraction provide good reason to believe that Federal Reserve policy can make a highly effective contribution to the mitigation of recessionary tendencies and to the prevention of downward movements of a cumulative nature.

On the other hand, it has been suggested variously that several circumstances may impede the full use of the Federal Reserve's power to restrain monetary expansion: (1) a part of the commercial banking system is outside the direct control of the Federal Reserve authorities; (2) excess reserves tend to be mobilized in periods of monetary restraint; (3) member banks make greater use of their privilege to borrow reserves from Federal Reserve banks in the face of tight-money policies; (4) the increasing plight of the Treasury and the threat of disorderly conditions in the government securities market may stay the hand of the Federal Reserve in periods of monetary restraint, thereby permitting the member banks to sustain a higher level of reserve balances than might be consistent with the attainment of fundamental policy objectives.

The first of these apparent impediments has not proved troublesome in the period since the accord. The share of total adjusted demand deposits held by non-member banks has fluctuated within a very narrow range. If anything, fluctuations in the absolute amount of non-member bank deposits may have a less pronounced cyclical pattern than fluctuations in member-bank deposits.

While the drawing-down of excess reserve balances and their greater mobilization through the federal funds market provide member banks with a means of cushioning the impact of Federal Reserve operations aimed at greater restraint, the effect would seem to be of only transitory significance. Open-market operations afford the Federal Reserve sufficient power to offset the effects that changes in the degree of utilization of excess reserve balances may have. Whether or not this power does, in fact, prove adequate depends upon the timing and magnitude of Federal Reserve actions.

More active use of the discount mechanism is one of the features of the monetary experience since the accord. Despite the so-called tradition against borrowing, it was to be expected that member banks would make greater use of the discount privilege as the Federal Reserve withdrew its support of the government securities market. The long-dormant problem of restraining an increase in member-bank borrowing came alive again in late 1952 and early 1953. As a result, the Federal Reserve undertook "a comprehensive re-examination of the discount function," and in February, 1955, a revised Regulation A was issued. It was made clear that member banks were expected to make use of the discount privilege only in the case of genuine need for short-term relief of reserve defiiciencies arising out of sudden losses of funds, seasonal pressures, or unusual situations of an emergency nature. The Federal Reserve thus reaffirmed its support of the tradition against borrowing and indicated that it was not prepared to rely only upon manipulations of the discount rate and the cost-price calculations of member banks to determine the volume of member-bank borrowing. Whether or not one agrees with the Federal Reserve's position in this regard, it must be admitted that the combination of administrative rationing, open-market operations, and the tradition against borrowing affords the Federal Reserve adequate power to cope with member-bank borrowing as an offsetting factor to a policy of monetary restraint.

The purpose of the accord was to establish, of course, the independence of the Federal Reserve to deal with the fourth possible weakness noted above, i.e., to relieve the Federal Reserve of any commitment to expand the money supply to support the government securities market. However, it was not until March, 1953, that the Federal Open Market Committee formally adopted a "hands-off" policy with respect to Treasury refundings and new cash offerings. At that time the committee established a policy of restricting its operations to the short end of the market (the controversial "bills-

only" policy), of not supporting any particular pattern of yields of government securities, and of not providing direct support of issues involved in Treasury financings. But, by indicating that these self-imposed restrictions might on occasions be set aside in the interests of correcting disorderly conditions, the committee acknowledged, in effect, a continuing responsibility for some degree of support of the government securities market. As a matter of fact, these restrictions were temporarily set aside between July and September, 1953, in November, 1955, and in July, 1958. More important, however, than these three well-publicized episodes is the impression that Federal Reserve policy has been more or less continuously influenced by concern about conditions in the government securities market.

TABLE 1*

ANNUAL RATE OF TURNOVER OF DEMAND DEPOSITS, EXCEPT INTERBANK AND U.S. GOVERNMENT DEPOSITS

Year	New York City	6 Other Centers	337 Other Centers
1950	31.1	22.6	17.2
1951	31.9	24.0	18.4
1952	34.4	24.1	18.4
1953	36.7	25.6	18.9
1954	42.3	25.8	19.2
1955	42.7	27.3	20.4
1956	45.8	28.8	21.8
1957	49.5	30.4	23.0

* Source: *Federal Reserve Bulletin*, November, 1958, p. 1298.

The issue pertinent to our present discussion is whether this concern for the state of the government securities market is an immutable barrier to the full exercise of the Federal Reserve's power to restrain monetary expansion or whether it is only a problem of correct policy formulation. There is some reason to believe that it may, indeed, be more than a problem of correct policy formulation. As this issue is also pertinent to the problem of influencing the rate of utilization of money balances, its consideration will be deferred until the Federal Reserve's power in this regard has been evaluated.

Within the past few years, there has occurred what might be called a rediscovery of the velocity of circulation of money. That such a rediscovery was more than timely is shown by the data in Table 1, which indicate a substantial rise in the rate of utilization of money balances in the period since the accord. It is well observed, of course, that increases in total spending can be effected through increases in the velocity of circulation of money at the same time that expansion

of the quantity of money is being restrained. It does not necessarily follow from this observation, however, that the Federal Reserve is powerless to deal with changes in velocity. A change in velocity is, after all, the result of decisions of spending units as to the rate of their money outlays relative to the size of their money balances. To the extent that the Federal Reserve can influence spending decisions, it can exert a direct influence upon the velocity of circulation of money.

Aside from alterations in payments customs, the rate of use of money balances can be changed in two general ways: (1) holders of money balances may increase or decrease their expenditures on goods and services relative to the size of their money balances—in other words, a choice is made as between spending and hoarding; (2) holders of money balances may increase or decrease their purchases of debt relative to the size of money balances, which is to say that a choice is made between lending and hoarding. The other side of this latter process is that certain holders of money balances may change their expenditures on goods and services, not by changing the rate of use of their own money balances but by borrowing funds or repaying funds to other holders of money balances.

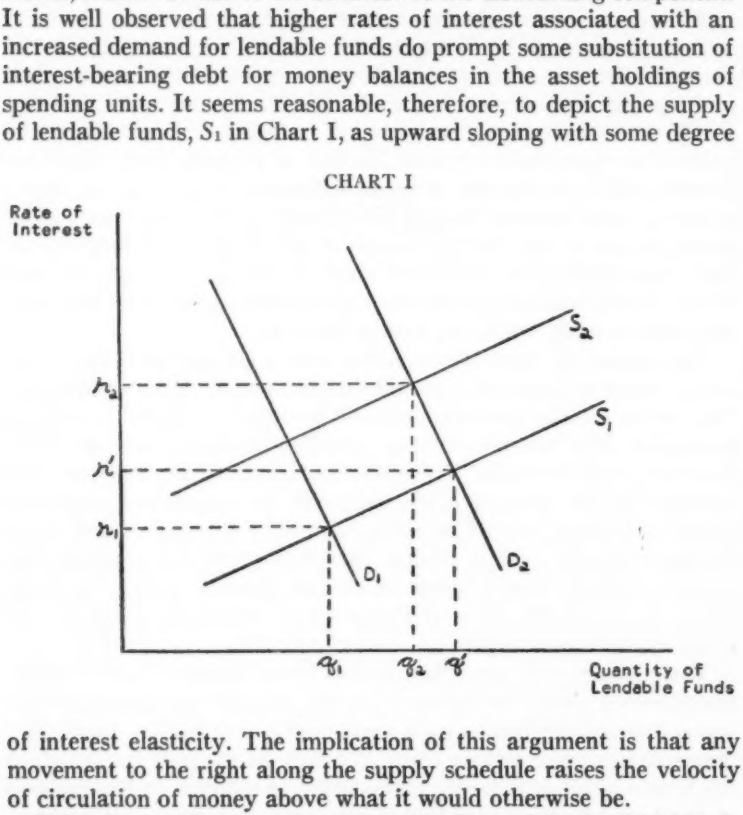
The choice as between spending and hoarding probably turns largely upon expectations as to the future trend of prices and income. The power of the Federal Reserve to control changes in velocity associated with changes in the spending-hoarding decision rests, therefore, upon its ability to convince holders of money balances that stability in the general price level will be maintained and that steady growth of income and employment will prevail. That is, in dealing with this type of change in velocity, nothing succeeds like success. And the initial degree of success depends mainly upon the extent to which the Federal Reserve can effectively influence the lending-hoarding decision.

The problem of Federal Reserve policy in this regard can be illustrated rather simply by reference to the familiar diagrammatic representation of the demand for and supply of lendable funds. The degree of interest elasticity of the demand for lendable funds, which has been a point at issue for many years, is relevant to the problem at hand, and in the belief that it represents the current consensus, the demand curve D_1 in Chart I is shown as being relatively, but not completely, interest-inelastic.

The degree of interest elasticity of the supply of lendable funds is also quite relevant. The supply of lendable funds in any period

can be attributed to three general sources: the creation of new money, saving out of current money income, and dishoarding. On the assumption that the monetary authorities can determine the amount of new money created, it is customary to take this component of the supply of lendable funds as being completely interest-inelastic. It is also widely held that the saving component is completely interest-inelastic. Therefore, if the supply of lendable funds is at all interest-elastic, it must be due to the behavior of the dishoarding component. It is well observed that higher rates of interest associated with an increased demand for lendable funds do prompt some substitution of interest-bearing debt for money balances in the asset holdings of spending units. It seems reasonable, therefore, to depict the supply of lendable funds, S_1 in Chart I, as upward sloping with some degree

CHART I



of interest elasticity. The implication of this argument is that any movement to the right along the supply schedule raises the velocity of circulation of money above what it would otherwise be.

Referring to Chart I, assume that the demand for lendable funds shifts for some reason or other from D_1 to D_2. In response to this expansionary shift, the monetary authorities reduce the new-money component of the supply of lendable funds, shifting the supply curve from S_1 to S_2. The rate of interest is increased from r_1 to r_2, but the amount of lendable funds exchanged increases from q_1 to q_2.

That a policy of monetary restraint restricts the availability of credit and reduces the volume of borrowing below what it would otherwise be is illustrated in Chart I by the fact that q_2 lies to the left of q'. The quantity q_2q' might be called "the availability effect." On the assumptions posed above with respect to the behavior of the components of the supply of lendable funds, the quantity q_1q_2 might be designated "the dishoarding effect." Much of the current controversy about whether a policy of monetary restraint can be offset by the operations of financial intermediaries can be boiled down to the question of how much the Federal Reserve can increase "the availability effect" and restrain "the dishoarding effect."[1] Given a shift to the right in the demand for lendable funds, the size of each of these effects depends upon the elasticity of the demand curve, the elasticity of the supply curve, and the extent to which the Federal Reserve can shift the supply curve to the left through its control of the new-money component. The more elastic the supply schedule of lendable funds and the more inelastic the demand schedule, the more forceful the Federal Reserve must be in its manipulations of the new-money component of the supply of lendable funds if it is to control changes in the volume of spending with borrowed funds associated with shifts in the demand schedule.

It is obvious, of course, that effective restraint of any tendency for the volume of spending with borrowed funds to increase must be associated with a rise in the general level of interest rates, and our diagrammatic presentation points up the fact that the extent of this rise depends in the last analysis upon the degree of interest elasticity of the demand for lendable funds. If this demand is relatively inelastic, a sharp and swift rise in interest rates would appear to be required to prevent the velocity of circulation of money from being increased as a result of increased spending with borrowed funds. That is, in the face of an increase in the demand for lendable funds the Federal Reserve must move quickly to deplete the capacity of the system to dishoard.

This brings us back to the problem of the Federal Reserve's concern for the state of the government securities market, for it is in

1. The effect of the intermediation of financial institutions is, I believe, to increase the elasticity of the supply of lendable funds. It may take only a small increase or decrease in interest rates to prompt savings intermediaries to increase or decrease the aggressiveness with which they market their obligations. The lending capacity of the economic system at one time is not invariable but can be increased or decreased as holders of financial assets are induced to shift the relative composition of their holdings as between money and interest-bearing debt assets. By narrowing the gap between the liquidity of money and interest-bearing debt, financial intermediaries, including the savings departments of commercial banks, increase the facility with which changes can occur in the volume of borrowing.

this market that Federal Reserve policy has its greatest impact upon interest rates. What are the reasons for the Federal Reserve's concern? Despite the affirmation of independence achieved in the accord, the Federal Reserve is still apparently susceptible to pressures of a political type. This is, perhaps, one of the most important lessons of the experience since the accord. Being a creation of the Congress, the Federal Reserve must necessarily conduct itself with some regard for its political viability. How many Treasury financings can be allowed to be something less than a success or how high can the cost of servicing the Federal debt be pushed without impairing this political viability?

There is, however, an even more fundamental reason for the Federal Reserve's concern for the government securities market. In its function as central bank, the Federal Reserve is, of course, the lender of last resort. The scope of this function is actually somewhat broader than the phrase may be thought to imply, for included in the function is the central bank's power to determine the shiftability of financial assets. Full exercise of the Federal Reserve's power to determine the upper limit of the quantity of money requires that the Federal Reserve refuse to add another dollar to member-bank reserves. Such a refusal, especially when most needed to restrain monetary expansion, would constitute an abandonment of the central bank's responsibility as lender of last resort. How much instability can be tolerated in the government securities market without such instability itself becoming a destabilizing force in the economy?

This conflict between its function as lender of last resort and its responsibility to prevent inflationary increases in the quantity of money is, in my opinion, the basic flaw in the power of the Federal Reserve. It is, indeed, the basic flaw in any system of monetary and credit control that relies almost entirely upon the manipulation of the quantity of money as its means of implementation. The problem of resolving this conflict is the essential reason why central banking has long been regarded as an art. Apt timing and modulation of policy actions may very well result in a tolerable resolution of the conflict. But the resolution of a conflict of this sort involves some degree of compromise, and any degree of compromise with inflation is inflation. It would be in order, but beyond the scope of this paper, for serious consideration to be given to the development of additional control techniques that are aimed at regulating the elasticity of the supply of lendable funds and the level of demand for such funds. In this latter regard we should not overlook the role that fiscal policy might be made to play.

TIMING CHANGES IN MONETARY POLICY

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WE WHO ARE ON the panel today are privileged in having an official license to engage in what has lately been a most popular pastime—criticizing the Federal Reserve. This is a game that is played under quite a variety of rules, since it is player's choice. Considering how great is the public interest involved, I think that we want to be at some pains in choosing our terms of reference.

It is idle, if not mischievous, to search the past record for "mistakes" in the sense of policy actions that would not be justified if we had known when they were taken everything that we know now. Policy is never based upon foresight that is perfect or is believed to be perfect. Rather, it reflects a set of tactics which should be designed with regard to existing ability to forecast economic developments and to foretell the effects of policy actions. With growth in our experience with modern monetary policy and our postwar economy and with shifts in the temper of that economy, our monetary tactics should develop and change. Those that would have been appropriate five years ago are not necessarily fitting today. To evaluate the tactics of the past and find guides for the future is our task. We should raise such questions as these: How great has been our ability to diagnose and predict economic developments? What tactics in reversing policy does this performance recommend? Can we see, with hindsight, a better schedule of timing of policy shifts during ordinary economic fluctuations?

To begin with, we need, I think, two general observations on our subject. We should admit, first, that there is but little than can be said with real confidence in evaluation of recent monetary policy. Such evaluation must stem from a theory of the specific channels through which monetary policy works, the dynamics of its influence on the economic process, and the precise aims of government economic policy. It is obvious that we have no solid theoretical basis for agreement on these matters and that, in fact, we disagree widely. Our disputes over the details of policy are largely but the symptoms of conflicting ideas—often only implicit ideas—regarding the underlying questions of theory. As such, these disputes have about them a strong flavor of futility. We shall not really agree on policy until we can reach an understanding on theory. We must discuss policy, but

it should temper any inclination to arrogance if we remember that many of the issues that really matter are excluded from our discussion because we cannot handle them.

The second introductory observation is this: Although one would not gather this from a perusal of some recent criticisms, the salient characteristic of monetary policy since 1951 is its success. Our recessions have been mild, brief, and followed by vigorous recovery. Between recessions, which was most of the time, total demands for goods and services were maintained within a range reasonably balanced between underuse and overfull use of resources. The price increases of 1955–57 were so disturbing precisely because they did not reflect the running-away of aggregate demand but rather came during a period when employment was not overfull by standards that would earlier have been regarded as reasonable. Although it has become fashionable to refer to this period as one of "boom" or even "superboom," it was characterized by unemployment larger than in either of the earlier postwar prosperity periods. The fact that aggregate demand since 1950 has been well controlled places a burden of proof on the critic who argues for a monetary policy radically different from the one that was followed. There is a great deal of room to have come out worse than we did and but little room to have come out better in our control over aggregate demand. The 1955–57 price increases, as we well know, represent a new problem that control over aggregate demand cannot by itself solve. With this background, let us take a look at the Federal Reserve policy record.

The Policy Record

The new era in monetary policy was opened by the Treasury–Federal Reserve accord of early 1951. For two years after this, there was no occasion for a reversal of the direction in which monetary policy was pushing. The tasks occupying the Federal Reserve were the further reduction in its commitment to the government securities market and the gradual tightening of bank reserve positions and credit conditions, with an accompanying reinstitution of member-bank borrowing from Federal Reserve banks and reactivation of the discount rate as an instrument of monetary policy. By mid-1953, when economic activity turned downward, the economy had been placed in such a position that a shift to a policy of credit ease had force.

The 1953–54 recession.—The recession of 1953–54 was thus the first challenge to the ability of the freed Federal Reserve System to

cope with an economic downturn. On its record, the System could support a claim of prescience. It decisively changed policy three months before economic activity turned down. Although it was not until September that industrial production fell below the plateau of earlier months or employment showed any substantial decline, the major Federal Reserve easing actions of the recession were taken within the span of a few weeks in May and June. During this period, the Open Market Committee bought more than $1 billion of government securities and freed $1.2 billion of reserves by reduction in reserve requirements. From May to June, average member-bank free reserves shifted $700 million in a positive direction, reaching a level that did not change appreciably until early 1954.

This remarkable Federal Reserve action stemmed mainly from the belief that financial conditions had been permitted to become too tight. At its June 11 meeting, the Open Market Committee changed the key words in the directive to the Executive Committee from "exercising restraint upon inflationary developments" to "avoiding deflationary tendencies without encouraging a renewal of inflationary developments (which in the near future will require aggressive supplying of reserves to the market)."[1] Although the committee was cognizant of possible weakness in the economic situation, the "deflationary tendencies" referred to were mainly those arising out of existing and expected financial conditions. The report notes that "financial markets . . . had been unsettled" and that "credit was more difficult to obtain than was considered desirable in terms of the Committee's policy approved at the March meeting. . . ."[2] The easing actions seem to have been thought of as a means of eliminating untoward tightness of credit conditions and reassuring the credit markets about the future by providing in advance a part of the reserves that were expected to be needed to meet Treasury financing needs, the seasonal rise in demand for bank loans, and other apparently large planned borrowing.

That the reversal of Federal Reserve policy was not based upon a forecast of the recession seems to me to be to its credit. With the evidence then existing, such action in anticipation of the recession would have been rash. But one must ask whether, having been laggard in letting credit conditions tighten as they did in April and May, the Federal Reserve was not rather heavy-handed in correct-

1. *1953 Annual Report of the Board of Governors of the Federal Reserve System*, pp. 86, 92.

2. *Ibid.*, p. 93.

ing the situation. If autumn had brought renewed expansion rather than recession, the policy would not have looked good. The idea apparently implicit in the reduction in reserve requirements in 1953 and again in the summer of 1954—that making reserves available in anticipation of an expected future increase in demand for credit is not the same thing as an easing of reserve positions, that it does not involve the same commitment to the future and loss of Federal Reserve initiative—this idea seems to me a questionable one.

On balance, then, we should probably give thanks that the 1953 turnaround in monetary policy worked out as well as it did, admitting that the forehanded easing reflected a combination of defects in policy rather than tactics that are a model for the future. But that an essentially correct anticipation of the recession played a role in the development of Federal Reserve decisions during this time is suggested by the subsequent continuity of policy. At its September meeting, the Open Market Committee shifted unreservedly to an expansionist position, characterizing policy as one of "active ease," although the economic downturn *still* was not an established fact and, of course, the shakiness in debt markets had been taken care of. The report of this meeting of the committee anticipated not only the fact but also the form of the recession in the observation: "The economy appeared to be entering a new phase in which it would be called upon to absorb resources freed by reductions in defense outlays and inventory accumulation, and there was a question about the ability of other demands to expand sufficiently to maintain current record levels of activity."[3] By the time of the committee's next meeting in December, the recession had become a matter of record, and its report could include the observation: "In the period since September, the decline in economic conditions, though moderate, has been unmistakable."[4]

Recovery and expansion, 1954–55.—Recent allegations that the Federal Reserve did not tighten credit rapidly enough in 1954 and 1955 lend interest to a consideration of the System's response to the recovery that began in the summer of 1954.[5] Economic activity

3. *Ibid.*, p. 98.

4. *Ibid.*, p. 102.

5. Chairman Martin expressed the view that credit was eased unduly in 1954 and not tightened again rapidly enough, in testimony before the Senate Finance Committee (*Investigation of the Financial Condition of the United States* [85th Cong., 1st sess.], Part 3 [1957], pp. 1304–5, 1401).

The joint reply of the presidents of the Federal Reserve banks gives support to this position, although it also observes: "It is only through hindsight that the need for a more

about leveled off in April or May of 1954; it began increasing in August or September and continued to rise rapidly and without interruption until after mid-1955. The quarterly Open Market Committee meeting of September 22 was too early to recognize the upturn, although the report referred to "some evidence that there might be an upturn in the autumn months."[6] The December meeting noted that "expansion in the economy had started to take place during the fall months," and the policy of the committee was changed from what was described as "active ease" to simply "ease."

But, although no formal change in the policy of the Open Market Committee was made until December and policy then was still characterized as one of "ease," credit conditions began tightening somewhat after mid-1954. Free reserves were at their peak from June through September and began declining substantially after November, although it was the summer of 1955 before free reserves became negative. Short-term interest rates rose from their summer trough in August but remained low until late in the year. In 1955 they rose rapidly, exceeding their 1953 highs. Bond yields increased but slowly during 1954 and 1955 and then began a very rapid rise in early 1956. Reserve bank discount rates remained at their low of 1½ per cent until early 1955 and then were raised in four steps to 2½ per cent before the end of the year, which compared with a previous postwar high of 2 per cent during 1953. Although the volume of business loans of banks increased very rapidly—rapidly even for a recovery period—growth in new bank-created credit and in the money supply was held to modest proportions after early 1955 as banks were forced to get funds to make loans by selling government securities.

It seems to me doubtful that, against the background of experience then existing, a much more rapid tightening of credit during this period would have been justifiable. There are, however, two things that could have been done differently to permit a smoother and somewhat more speedy increase in credit restraint.

In the first place, the further easing of reserve positions in the summer of 1954 resulting from the reduction in reserve requirements, which came after economic activity apparently had leveled off, seems

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restrictive policy in the early stages of the boom seems clear" (*ibid.*, Joint and supplemental comments of the presidents of the Federal Reserve banks, chap. i, pp. 44–45).

An extreme criticism of Federal Reserve policy in 1955 as insufficiently restrictive is given by Asher Achinstein in *Federal Reserve Policy and Economic Stability, 1951–57*, published by the Senate Banking and Currency Committee (1958).

6. *1954 Annual Report*, p. 96.

undesirable. By this action, the Federal Reserve in effect gave away its ability to respond promptly to the beginning of recovery. The timetable of practicable tightening actions was moved backward several months.

In the second place, although this is surely more clear now than it was at the time, the Treasury should have issued more long-term debt and put more pressure on bond yields to adjust upward from the end of 1954 through early 1956. The failure of the capital market to tighten in a manner consonent with the improvement in business conditions and the change in monetary policy encouraged to some extent the formulation of large plans to finance fixed investment in 1956 and required a very sharp adjustment in bond yields in that year.

In saying that experience suggests the preferability of these tactics, I am not arguing that monetary policy during this period should have been a great deal tighter. To argue, in effect, that, because prices rose in 1956, Federal Reserve policy *ipso facto* was too easy in 1955, to imply that the Federal Reserve could have pushed some button that would have given us price stability with full employment during this period, seems to me quite wrong-headed. The basic point of reference is the fact that aggregate demands were restrained within reasonable limits. We had, indeed, a rapid recovery, but that was what most people at the time thought that we wanted. That under these demand conditions substantial price increases would occur and would cause the country to develop an inflation obsession—these things could not have been predicted with confidence. Now that this experience is behind us, one can argue that the Federal Reserve should attempt to engineer recoveries from recession that are slower and less complete, in order to head off future price increases, though this would by no means command unanimous assent. But the 1955–57 price increases represent milk that not only has been spilled but had to be spilled, and there is little to be gained from crying over the matter now.

Exuberance and pessimism, 1956—The year 1956 sorely tried Federal Reserve diagnostic abilities. It was a year of stop and go in business expectations and in monetary policy. The Federal Reserve twice eased credit somewhat on evidence that, in retrospect, does not seem compelling. The error was not a private one, however. The System resisted strong outside pressure to ease more than it did.

Policy shifted toward ease in January, when the directive to the New York Federal Reserve Bank as manager of the System's open-

market account was changed to include the clause, "take into account any deflationary tendencies in the economy." The justification for this was that "there had been a slight—perhaps almost imperceptible—change in the state of the economy in recent weeks, which might make some relaxation of restraint appropriate in the near future."[7] In March the deflationary clause was deleted on the basis that "available information pointed toward a further advance."[8] In May it was added again on the basis that the committee "found less exuberance in the economic situation" and considered a decline possible.[9] The deflationary clause was again deleted in August and was not heard from again that year. However, in late September the committee, while retaining the same directive, shifted policy toward ease because of prospective Treasury financing problems. In November it added a clause to the directive to take account of "additional pressures in the money, credit, and capital markets resulting from seasonal factors and international conditions."[10] On this basis, bank reserve positions were eased very substantially; banks enjoyed positive free reserves for the first time in a year and a half.

Interest-rate developments in 1956 were similarly unsteady. Rates declined early in the year, then rose sharply in March, eased in the spring in response to Federal Reserve policy and softening in business expectations, and rose thereafter on an upsurge in spending and demand for credit. But late in the year, interest rates rose sharply further, despite the easing of bank reserve positions, which thus may have been necessary to prevent a runaway credit tightening such as that of the spring of 1953.

I think that 1956 policy erred on the side of attempting to be too responsive to minor changes in business sentiment and in the apparent economic outlook. Although the abortive easings were quickly reversed, undoubtedly they detracted from the restraining influence of the year's policy. What is also interesting about these actions is their position as the neglected counterpart to the type of alleged Federal Reserve error that has recently received so much attention—insensitivity to evidence of economic weakness—1956 was the year of hypersensitivity.

Holding the line, 1957.—In 1957, probably in part because of its 1956 experience, the Federal Reserve System held policy to a firmer

7. *1956 Annual Report*, pp. 19–20.

8. *Ibid.*, pp. 25–26.

9. *Ibid.*, pp. 29–30.

10. *Ibid.*, p. 43.

line. Throughout the year until the November reversal, the key words in the directive to the Account Management were "restraining inflationary developments in the interest of sustainable economic growth." For January and February the reports of committee meetings evidence concern with weakening in the economic situation, and the easy bank reserve positions with which the year opened were only gradually tightened in February and March. From April through mid-October, however, bank reserve positions were held tight and unusually steady, with net borrowed reserves of around $500 million. The position of the committee was that, as it was put at one point, "it was not possible to tell whether the present sideways movement would continue for some months, perhaps with a renewed upward movement, or whether the economy would decline."[11] In the report on the July 9 meeting, reference was made to the experience of a year earlier, when "easing tendencies through July had been followed by strong expansion later in the year."[12] The avowed policy apparently could be summarized as one of reversing the earlier easing of reserve positions and then holding steady until there was substantial evidence of a change in the economy.

But, although the pressure on bank reserve positions was held unchanged, credit conditions moved toward greater tightness. Seasonally adjusted demand deposits began to decline after July, and interest rates rose rapidly from May through September, setting new postwar highs. In response to increases in market rates and in the commercial bank prime rate, Federal Reserve discount rates were raised in August by a full half-point to 3½ per cent.

Criticism of the Federal Reserve for not undertaking a major shift to a policy of credit ease in anticipation of the recession can be dismissed, I think, on the basis that the future was uncertain, the economy had little slack to meet any new upsurge of demand, and the damage wrought by another round of price increases on top of those already experienced would have been considerable. But if the evidence was insufficient to justify major easing, it does not seem to have called for tighter credit conditions. In permitting interest rates to rise as they did, the System, in my judgment, was mistaken. It was leaning against inflationary winds that proved to be imaginary, or it concentrated too much attention on bank reserve positions to the exclusion of other measures of the effects of policy.

The recession of 1957–58.—The break in output that signaled

11. *1957 Annual Report*, p. 44.

12. *Ibid.*, p. 48.

the onset of the recession did not come until October, 1957, although both industrial production and manufacturing employment had slid off a bit since early 1957. The Open Market Committee in meetings of August, September, and October 1 took account of signs of weakness in the economy but did not change policy. Not until the October 22 meeting did the committee begin to shift. At that time, the directive was not changed, but the committee agreed that policy "should tend on the easier side from where it had been in recent weeks."[13] At its November 12 meeting, at which preliminary data on October economic developments were available, the committee felt that the evidence was sufficient to change policy. The key words in the directive were changed to call for operations with a view "to fostering sustainable growth in the economy without inflation, by moderating the pressures on bank reserves." The report on the meeting includes the observation that "there no longer was much doubt that at least a mild downturn in business activity was under way, and there was widespread belief that it would probably continue well into 1958. The major question seemed to be not whether a further business decline would occur, but for how long and in what degree."[14] In December the key words in the directive were changed to "cushioning adjustments and mitigating recessionary tendencies in the economy."[15] It seems to me noteworthy that, despite its "wait and see" attitude, the System diagnosed the downturn with sufficient confidence to change policy decisively with a lag of only a few weeks.

The System committed itself promptly to a reversal of policy by cutting discount rates back to 3 per cent on November 15, which precipitated an unusually sharp decline in both short-term and long-term interest rates. However, the complaint was made at the time, and with merit, that the System could have moved more rapidly to ease bank reserve positions. Reserve positions did shift in the direction of ease, but still, in December, they remained tighter than they had been a year earlier when there was no recession. It was February before reserve positions became easier than they had been a year earlier and before the money supply began to increase after six months of unusual decline. From February through April, 1958, partly reflecting three reductions in reserve requirements, genuinely easy reserve positions were created, the volume of demand deposits

13. *Ibid.*, p. 54.
14. *Ibid.*, pp. 55–56.
15. *Ibid.*, pp. 60–62.

increased rapidly, and discount rates were lowered to 1¾ per cent. Credit was abundantly eased.

Economic recovery began in May, a fact that was soon common knowledge. Lower turning points have not yet given us such diagnostic problems as their opposite number. Although it had to make purchases amounting to more than $1 billion late in July in support of a Treasury financing operation, the Federal Reserve managed to keep free reserves steady from March through July and start them downward in August. The need for rapid tightening of bank reserve positions was minimized by the remarkable rise in interest rates that occurred from July through September, but still free reserves were reduced promptly, falling from the summer level of about $500 million to about zero in November. There seems little room this time for complaint that the tightening in credit conditions was dilatory.

The remarkably sharp rise in interest rates after midyear can be understood only as the product of a complex of forces, including the large government deficit and financing needs, public confidence in growth of total demands, rampant inflation psychology, bullishness in the stock market, reversal of earlier bull speculation in bonds, and the Federal Reserve actions. As always, the situation has too many new ingredients to permit easy comparison with the past. But this time there may be room for concern that the adjustment from recession credit conditions to prosperity credit conditions was too fast. The Federal Reserve performance reflects lessons learned from the preceding recession, but unfortunately there may be some new lessons to be learned from this one.

Conclusions

Such, in outline, is the recent Federal Reserve record. Viewing this experience, as we do, with different terms of reference, we are unlikely to agree as to the lessons to be drawn from it, but let me summarize four major points that strike me.

Flexibility in stabilization policy.—First, some observations regarding the timing and flexibility of policy changes. The Federal Reserve has shown that it is possible to diagnose major reversals in economic developments with confidence with a lag of not more than a month or two. This is an important accomplishment. It provides a basis for at least some minimum sort of economic stabilization program. However, the record also illustrates how limited has been our ability to predict turning points or to change policy correctly on the basis of minor variations in the spending rate or shifts

in the state of psychology. The dilemma is illustrated by comparison of the 1956 experience, when the System reacted to clues that turned out to be unreliable, with that of 1957, when it neglected symptoms that proved to be portentous.

Improved diagnosis may help us out of this dilemma. Aside from some unpredictable behavior of consumers, recent economic fluctuations seem to have followed a fairly self-consistent pattern, and we should be able to improve our forecasting within limits on the basis of our growing fund of relevant experience. But until our diagnostic ability proves itself better, the limitations of our foresight seem to justify the tactic of holding major changes in policy for positive evidence of a change in the direction of economic developments, to argue for a skeptical view of supposed changes in economic conditions that are "slight, almost imperceptible."

Another point with regard to timing and flexibility. Since small variations in timing are important in monetary policy, the necessity of giving active or passive support to Treasury financing operations is an important limitation on the freedom of action of the Federal Reserve System. The record offers examples of loss of initiative by the Federal Reserve and of ill-timed actions influenced by the policy of helping Treasury financing. The Federal Reserve cannot ignore Treasury financings so long as they are carried out as at present, but new techniques might be found to reduce the need for large and critical periodic financing operations and permit the Treasury to stand more largely on its own feet.

A more general point regarding diagnosis and flexibility is this: The evidenced limitation of our predictive ability implies that an instrument of economic stabilization policy cannot be useful unless it is flexible. If policy can be changed only by large steps that are accompanied by fanfare and are difficult to reverse, a change can be made only when it certainly will not look foolish—or even unnecessary—six months or a year later. With our present forecasting ability, this condition is seldom, if ever, met. It is this fact, I think, more than any infatuation of administrators or theorists with monetary policy that has left discretionary fiscal policy virtually worthless as a weapon against ordinary economic fluctuations and placed monetary policy uncomfortably alone as our defense against instability. Suggestions have been made for making fiscal policy and debt-management policy available for flexible anticyclical use. When the need to do so is recognized, some progress in this direction can be made.

Timing in anticyclical action.—The second group of observations has to do with the broad timing of Federal Reserve action in response to business fluctuations. The record to date suggests to me the desirability of moving early against a reversal of economic developments and then of holding policy relatively steady while waiting for the next turn in the road. Let me illustrate what I mean. While we have little ability to forecast recessions, we seemingly can recognize a full-blown recession with confidence shortly after it begins. Rather than permit bank reserve positions and credit conditions to ease slowly over the course of, say, a year, reaching a position of maximum ease after the economy has leveled off or after recovery has begun, it seems appropriate to move more rapidly, to bring about conditions of full credit ease within, say, three to six months after the downturn. Such a policy can be justified on the basis that the environment within which spending decisions are being made is drastically altered when the economy stops rising and starts declining. It is proper, then, to bring about as prompt an offsetting shift as is practicable in the financial conditions affecting spending decisions. To do so will minimize the duration and extent of the recession. Once a condition of credit ease has been brought about, the Federal Reserve can maintain a flexible posture, ready to begin moving in the other direction as soon as recovery begins or to apply emergency easing actions if these are needed.

Although there are dangers in too sharp a credit tightening during the early stages of recovery, I think that the argument for early action is basically symmetrical. The abnormally easy credit conditions of recession should not be permitted to linger long after the economy has reversed direction, after bullishness has replaced bearishness and plans for expansion of investment expenditures are being drawn up. This applies not only to bank reserves and the money market but also to the bond market, where, if they are not brought about by the speculative influence, yield increases may lag until enlarged investment programs are being financed and liquidity has been worked down. A timely rise in bond yields can be encouraged by the issue of Treasury bonds.

If credit conditions are brought to a somewhat restrictive position within, say, six months to a year after the onset of recovery, there is a presumption that they should not then get progressively tighter and tighter until a period of sharp increases in interest rates culminates in a new recession. Indeed, after the steam is out of the expansion movement, it might be possible to permit some easing in credit conditions.

The conduct of such a policy is not easy to prescribe; it is partly a question of what measures of policy should be consulted. The 1953 and 1957 experiences suggest that, because of tendencies of credit restriction toward cumulative effectiveness and because of lags in expansion of tong-term financing, credit conditions may tend to tighten and interest rates to rise in the late stages of a prosperity period, even when monetary policy is not increasingly restrictive in terms of bank reserve positions. This suggests that under these conditions policy must be guided more than usually by credit conditions, interest rates, and the behavior of demand deposits, with undue tightening in terms of these indicators prevented, if necessary, by easing of reserve positions.

The use of the discount rate.—A third type of comment applies to the use to be made of particular instruments of Federal Reserve policy, the issue being the role of changes in Federal Reserve discount rates. The System has tried to make of the discount rate an active instrument of discretionary monetary policy, arguing that it works through three channels: through directly affecting market rates of interest, influencing the willingness of member banks to borrow from Federal Reserve banks (with given interest rates and credit demands), and sometimes, but not always, signaling a change in Federal Reserve policy.

I am dubious of the usefulness of discretionary discount-rate policy through each of these channels. Is it not preferable that interest rates should reflect underlying supply and demand conditions rather than be moved by administered connections to Reserve bank discount rates? And is not calculation of the response of bankers to changes in their reserve position difficult enough without introducing an unneeded variable in the form of an irregularly changing spread between Federal Reserve discount rates and other interest rates? Finally, are not changes in discount rates an obscure and inadequate way of communicating to the public such forecasts or advance policy commitments as it may be appropriate for the Federal Reserve to make? I would give positive answers to these questions.

Some of the difficulties with an active discount-rate policy are illustrated by the 1957 experience. The August discount-rate increase contributed to some extent to credit tightening and adversely affected expectations, although such announcement effects apparently were not desired. The November reversal of this action, on the other hand, was described by the Federal Reserve as "a clear signal to the business community and the public generally that Federal

Reserve policy was being directed toward moderating pressures on bank reserves."[16] But in this case also the "clear signal" apparently did not mean to the market quite the same thing that it meant to the Federal Reserve; for, although the Open Market Committee for some time thereafter remained cautious about easing bank reserve positions, the signal immediately precipitated the most extraordinary bull market in bonds, a development that would have been most untimely had recession not been in the offing. The discount rate-reduction seems to have served waiting debt speculators in the capacity of a starter's gun and thus to have contributed to the unduly speculative flavor of the bond market in both phases of the recession. This experience lends support to the argument that the System should subordinate the discount rate by making adjustments in it routinely in response to changes in market interest rates and should seek a less ambiguous vehicle for such communication with the public as may be useful.

Monetary policy and the money supply.—The final point that I want to make is of rather a different order from the others. It is properly rather a large story in itself, and it probably raises a question as to whether some of the things that I have been saying make any sense. Let me raise the matter anyway, for if it is too big to handle here, it is also too important to neglect here.

The best single measure of the force that Federal Reserve policy is applying to the economy at any particular time, to my way of thinking, is the behavior that it brings about in credit created by commercial banks, in demand deposits, and in the money supply. Let us, then, ask, "When the Federal Reserve dramatically reverses policy and shifts from credit restraint to credit ease, just what sort of change in the money supply does this entail?"

It is perhaps surprising to find that these reversals of monetary policy, produced with such soul-searching and received with such fulness of praise or blame, often can scarcely be discerned in the behavior of the money supply. In the short run it has moved mainly along rather a steady course. Such short-run variations in the money supply as we have had were mainly procyclical, a decline or a reduced rate of growth in the money supply occurring during recession and an accelerated growth during recovery. This raises some interesting questions, does it not? Does the Federal Reserve, in effect, laboriously contrive to bring about changes in credit conditions that, with a stable monetary system, would happen of their own accord?

16. *Ibid.*, p. 18.

There is, I think, much truth in this interpretation. A postwar monetary policy that has been considered aggressively anticyclical could have been about duplicated, in some respects bettered, by a rule of simply preventing procyclical variations in the money supply. For example, monetary policy would have adjusted more promptly and, I think, more effectively to the recent recession if it had simply held the money supply steady instead of permitting a substantial decline during the last five months of 1957. Whatever the other difficulties that would be involved in such an approach to policy—and surely there would be difficulties—you can see that it quite eliminates the need for predicting turning points. This approach would reflect the view that the changes in credit conditions that characteristically accompany changes in economic conditions reflect mainly forces naturally generated by the economy, variations in the supply-demand balance for loan funds accompanying changes in incentives to save and to lend, to invest and to borrow, expectationally governed activity in debt markets, etc. One advantage of the policy would be that it would direct attention to these forces and would combat the common error of attributing to the Federal Reserve everything that happens in financial affairs.

I do not wish to go overboard on the idea of an automatic monetary policy. I believe that the Federal Reserve has substantial powers and has the responsibility to use them for all that they are worth. I am not sure that steady short-run growth in the money supply would necessarily be the answer to all the situations that could arise in the future, and it is by no means obvious what the rate of growth should be or when it should be adjusted. But it must give one pause to observe that in furnishing a constructive monetary response to recession, which is perhaps the most crucial task of monetary policy, this rule would have worked well, better than what was done. Perhaps, at least, we can say that too much attention has been lavished on the procedures, the mechanics, the drama of Federal Reserve control, and too little has been directed to the behavior of the basic variable that is being controlled.

So long a list of comments and suggestions may seem to depreciate the competence of the Federal Reserve performance, but I think that, in truth, its record is one in which the System can take pride. At the end of the war, we picked up with a basically new economy and entered a new economic era that was quite unlike the 1920's and even more unlike the 1930's, the seedbed of so much doctrine about stabilization theory and policy. The postwar period has been a time for learning, for revision, for construction. The Federal

Reserve has evidenced willingness to learn from accumulating experience and, despite a good deal of opposition, has built a system of monetary control that seems to have contributed importantly to our stability and that presently stands as our only ready defense against instability.

Since competence and achievement are necessarily relative matters, it is interesting to suggest some points of comparison for the Federal Reserve performance. Perhaps three meaningful ones can be framed in these questions: How has Federal Reserve diagnosis and action against instability compared in quality with that of the Treasury, the President, the Congress? How many of the major critics of the Federal Reserve, in consideration of their doctrines and their whole record, would have us now in a better position than we are in if the responsibilities of monetary management during the last ten years had been theirs? How does Federal Reserve record in building a realistic and useful monetary policy from our postwar experience compare with that of economists in culling the inherited doctrines and creating a realistic and useful monetary theory? On these tests, I think that the Federal Reserve looks good.

MONETARY POLICY AND ECONOMIC STABILITY
SPEED AND SCALE OF ACTION*

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THE POSTWAR RENAISSANCE of central bank policy reflects the enduring significance of the monetary equation for the economy as a whole. Although the accumulated evidence indicates that central banking has not eliminated economic fluctuations, optimum usage has rarely, if ever, occurred and perhaps has not even been described. Yet, without the inclusion of the appropriate monetary measures, the problems of stabilization policy would be seriously compounded.

Although many changes have taken place since the days when the central bank held unchallenged leadership as the agency of stabilization policy, tempering economic fluctuations through monetary controls continues to be an integral part of our efforts to tame the cycle. As contrasted with the classical central banking problem, gold movements no longer provide a useful guide to changes in policy. Recently, we experienced a substantial gold inflow during a boom and large drain in the slump—hardly a serviceable basis for policy. In the United States the size of the gold stock has contributed to the decline of international monetary considerations as a leading guide to central bank policy; this is not to say that such factors are inherently or permanently unimportant here. Elsewhere, international money flows continue to have considerable importance and frequently follow a more orthodox pattern. For such countries, adverse movements of funds can be a powerful determinant of monetary policy. However, the conclusions drawn in this paper bear on central banking policies where they are not immediately responsive to international money flows, mainly the United States.

With gold movements largely eclipsed as a determinant of central bank actions, emphasis in recent years has been placed on internal guides and domestic considerations. This adds certain elements of novelty to the monetary problem. The classicists envisaged a situa-

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The views expressed represent those of the author and not necessarily those of the Credit Union National Association.

tion in which, for example, domestic overexpansion would ultimately be reflected in a gold drain; this in turn would serve as a clear and unimpeachable signal for a restrictive policy. Today, in the United States, the guides for policy depend mainly upon the appraisal of the current domestic economic situation, about which, at any one point in time, there will always be conflicting opinions. In the absence of reliable and verifiable methods of forecasting, differences in judgment about the proper course of action will doubtless persist. Bereft of any simple formula as a guide to action, the monetary authorities must have comprehensive information about the current economic situation, interpreted, however, by experience, judgment, and insight. In regard to the latter, it is understandably difficult to be authoritative, but frequently the most pressing decisions to be made are those about which judgments differ. Therefore, monetary policy and, indeed, the other features of stabilization policy cannot hope to be exempt from controversy.

However, to the extent that these conflicting judgments reflect divergent appraisals of the long-term course that the economy is following, they might be moderated as knowledge and experience accumulate. For example, while full employment and price stability are widely heralded as appropriate goals, considerable doubt nonetheless remains whether these conditions can be maintained continuously or, indeed, whether one or another of these aims holds primacy. Since current techniques and practices have not solved the problems of fluctuations in output and prices, it is relevant to inquire into the extent to which these recurrent swings can be limited. Until these issues are resolved, there appears to be no sure way of reconciling conflicting views about the speed and scale of monetary action, for each point of view seems to carry with it an implied approach.

The development of the doctrine of contracyclical fiscal policy and the expansion of the federal budget has made necessary an appraisal of the respective roles of monetary and fiscal policy. The appropriate division of labor between monetary and fiscal policy bears on the subject of this paper, for the appraisal of the monetary response to economic and financial changes must necessarily be developed with reference to the fiscal response; in addition, some judgment needs to be made about the probable effectiveness of these measures, coupled with the self-equilibrating forces in the private sector of the economy, in offsetting and reversing seriously destabilizing influences. In the time allotted to this paper, these remarks

can do no more than broadly sketch a point of view. A definitive treatment of these questions requires that they be given a fully generalized statement. With regard to the political economy of stabilization, theory and policy are wed.

The Concept of Economic Stability

1. Modern economic opinion has given considerable emphasis to full employment as a goal of public policy. Prior to the 1930's the view was widely held that "full employment" was the typical state of affairs in a competitive economy and that slumps were temporary aberrations. Either through monetary measures or through price-wage flexibility, the means of maintaining a satisfactorily high level of aggregate output and employment without inflation were believed to be readily available. These opinions were shaken by the events of the depression and by the conceptual developments of the period, particularly the view that full employment was not a necessary characteristic of a market economy. The role of compensatory fiscal policy was elaborated at length, and monetary policy was assigned a position somewhat less prominent than in the orthodox approach.

Although these issues have been examined intensively in the literature, no consensus has been reached as to whether the major instances of cyclical instability (particularly with respect to deflation) were historically inevitable or whether they resulted principally from misdirected public policies. The evidence is persuasive that major instances of inflation have been closely linked to expansionist monetary and fiscal policies, but divergent opinions are held concerning the etiology of slumps and depressions. While this complex issue cannot be settled easily, one can perceive, for example, that the monetary disturbance in 1931 was closely related in time to the extension and deepening of the great depression. It seems evident, however, that the most promising single remedy rests with the avoidance of major "mistakes" in policy.

The relatively favorable postwar experience in the United States cannot, however, be taken as conclusive evidence that sharp and prolonged deviations from stability result mainly from inappropriate policy, although with each passing cycle this proposition gains increasing warrant. In any event, the economy during the postwar period has operated at or near full employment, and such slumps as have occurred have proved to be relatively mild and short-lived. In respect to output and employment, the total performance has been rather similar to the end result envisaged by the classical

economists. Despite some improvement in recent years, the same is not true with respect to maintaining the value of money.

Before proceeding further, it may be well to point out that in each of these respects there is no guaranty that the next decade will resemble the past or that more serious fluctuations will not develop in the future. However, the high-level performance of the postwar economy should help dispel deep-rooted pessimism in the same fashion that the depression years mauled some sanguine hopes. The problem of maintaining stability requires the ability to deal effectively with disequilibrating forces whatever their source, strength, and direction of movement.

However we define stability, it is imperative that it be given a meaningful time dimension without which the measurement of results becomes tangled in a snare of ambiguous standards. For example, one's judgment about the performance of the economy as a whole depends in part upon whether short-term or long-term criteria are adopted. If full employment means a state of affairs in which unemployment as a percentage of the labor force never rises above some assigned level, say 4 per cent, our conclusion would necessarily be different than if the relevant criterion is the average level over a period of years. This concern with time should recall parts of the Malthus-Ricardo debate and Keynes's famous jibe about the long run. In regard to the possible conflict between short- and long-period objectives, neither is a categorical imperative, but there remains a continuing problem of achieving the best possible mix between the various aims of policy.

Indeed, there is considerable doubt whether economic forces can be so finely balanced as to produce a steady ascent along a smooth growth curve. The history of business cycles does not disclose such a pattern, and one need not be thoroughly Schumpeterian to recognize periodic waves of activity. The expectation of economic fluctuations seems to accord with certain characteristics of the spending process, to mention only one aspect of the problem. While monetary and fiscal policy may be able to impose limits on the amplitude of fluctuations in the general level of activity, it is pertinent to inquire into the extent to which this can be realized. While a precise answer depends upon many imponderables, there is reason to believe that monetary and fiscal policy would not entirely eliminate the cycle, even under the best of circumstances. This being so, certain advantages accrue when the aims of policy are stated in realizable—and not utopian—terms.

2. Inasmuch as contemporary opinion has been cut adrift from the comforting classical view about stability conditions in the economy as a whole, there is a gap in our outlook which the doctrines of secular stagnation or secular inflation have not been able to fill. If, under most circumstances, self-equilibrating tendences are evident in the economy, we have a standard on which to base our collective attitude toward central banking policy and the fiscal authorities. On the other hand, if one starts from the premise that some permanent, or quasi-permanent, disequilibrium system is a dominant feature in economic life, there is raised the interesting question of whether the authorities should constantly be leaning in the other direction, irrespective of the immediate outlook.

This kind of dilemma, which would be more perplexing if the events of the recent past supported the pessimists of either extreme, has a constructive solution, in my judgment. The addition of fiscal policy (when managed properly) to the arsenal of defenses emphasized by the classical economists carries with it the strong possibility that in the future we can achieve a relatively low average rate of unemployment over time. While inflationary or deflationary potentialities will become evident in the future as they have in the past, it is highly likely that their more serious manifestations can be kept within tolerable limits. Optimal success probably will not be achieved, and it is possible that occasionally the tide of events may surge beyond the limits which are consistent with our short-term goals. Despite such lapses, it is very likely that cumulative movements away from full employment can be avoided.

Under modern circumstances, to be pessimistic about the prospects for maintaining over-all stability implies certain views not only about the characteristics of the private sector of the economy but about monetary and fiscal policy as well. Granted that the etiology of cyclical instability is not comprehensible solely in terms of aggregates and that certain types of disturbances may be less responsive to broad national remedies than others, this does not mean that our policies will be entirely unsuccessful. If the appropriate steps are taken on the level of national policy, a qualified optimism about the possibility of maintaining stability appears to be tenable.

Monetary Policy

3. With no simple criteria available to guide the speed and scale of central bank policy steps, sweeping generalizations about this topic are open to legitimate doubt. The circumstances of time and

place cannot be ignored, nor indeed can the common aspirations of the society in which the central bank functions. Hence, if a society wishes to embark upon an inflationary policy, the process in the short run may be slowed by adroit monetary management, but it cannot—and perhaps ought not—be entirely avoided. There is a widely held opinion that in the United States today we are pursuing such a course; whether or not this is a correct judgment is an impirical question, to be decided by the testimony of events rather than inconclusive a priori speculation. However, so far as the balance of this paper is concerned, I shall assume that the objectives of public policy include the avoidance of secular price increases in addition to the avoidance of large-scale unemployment.

In this paper, "monetary policy" means the discretionary authority vested mainly in the hands of the central bank to influence bank credit creation and the money supply. While the question of "rules" versus "authority" raises a variety of problems, time does not permit a detailed analysis of them. However, if the general objectives of public policy are consistent with monetary and economic stability, discretionary central banking can be accommodated to these ends and indeed may have certain positive advantages in achieving such goals. On the other hand, if the public wants inflation or tolerates expansionist policies, the possibility of establishing an ordinance limiting the growth in the money supply seems to be regrettably remote.

Perhaps the basic feature of discretionary central bank policy must be flexibility. For the central bank to moderate cyclical shifts, it is important to get the appropriate monetary adjustment to the changing tide of events, and this requires continuous interpretation of the basic data. Moreover, at relatively infrequent intervals, there arises the need for bold and unusual policies to deal with particular disequilibrating conditions; in such circumstances the central bank must be prepared to adopt measures appropriate to the moment. The increase in bank rate to 7 per cent in Great Britain in September, 1957, is a case in point.

However, in the more typical ebb and flow of the business cycle, the drama inherent in crisis policy must give way to the careful, gradual development of the type of monetary environment consistent with economic stability. There is a premium on gradualness during the "normal" sequence of expansion and contraction, represented by the changes noted during the postaccord period. The appraisal of economic conditions requires validation by the passage of time, without which the danger of premature or otherwise inappropriate action

is greatly increased. This is not to say that the central bank must eschew making forecasts and predictions for internal policy-making purposes. Clearly, on a working basis, temporary and seasonal changes in the economy need to be distinguished as precisely as possible from more fundamental and persistent adjustments. However, before major steps toward either monetary stringency or ease are taken, there should be available a considerable body of current evidence and data supporting such clear-cut actions. This does not imply that gradual shifts in the availability of reserves must also be warranted by a similarly massive body of information, as small variations can legitimately be made for a variety of technical reasons without signaling a fundamental alteration in policy. Since no one is quite immune from the danger of mistaken forecasts, there are demonstrable defects in basing monetary policy on expectations of future developments. Changes in central bank policy under these conditions might themselves become destabilizing influences.

For these reasons, therefore, to expect instantaneous or otherwise rapid and aggressive actions by the central bank in response to cyclical changes (except in clearly defined crisis situations) presupposes precise forecasting. The path of least error requires that economic movements be fairly well documented before the full vigor of the monetary weapon is utilized. It is, of course, true that fiscal policy measures are subject to the same limitation.[1]

While monetary and fiscal actions have demonstrated their potency, one looks in vain for evidence that these actions can avoid all deviations from full employment and price stability. The better part of prudence would be to recognize that, with present techniques, cyclical expansion and contraction cannot be eliminated but that the possibility of limiting and reversing otherwise cumulative and self-inflammatory movements is relatively good.

4. The criticisms leveled at aggressive, prompt, and vigorous monetary measures do not necessarily apply to the gradual and persistent application of monetary techniques. For example, once a cyclical revival is under way, the early response by the monetary authorities should be in the nature of gradual, though perceptible, steps in the direction of increased pressures on bank reserve positions. Restraining actions should be intensified as the expansion develops, although the circumstances of the individual cycle naturally dictate the speed with which each additional action is undertaken. While these mone-

1. Indeed, even the "automatic stabilizers" may get out of phase, as they have recently, in producing lower revenues well after a recovery movement had started.

tary measures are being introduced, moreover, there normally will be increasing demands for capital as the level of economic activity increases, and these, combined with the monetary measures, will lead to higher levels of money rates, and the evidence during recent years indicates that the lessened availability and higher cost of lendable funds eventually create a barrier to cumulative expansion. How quickly this could be erected would depend mainly on the intrinsic vigor of the expansive forces, although the technical liquidity position of the banking system and the financial position of the Treasury powerfully condition the outcome.

It is, however, in the contraction phase of the cycle that contemporary attitudes and practices may be troublesome. For reasons comparable to those expressed above concerning the monetary response to economic expansion, it would be inappropriate for the growth of bank credit to be greatly accelerated immediately following the downturn of economic activity. Of course, as the contraction progresses, monetary ease can be pressed increasingly—again based mainly on the accumulating evidence of the nature of the decline rather than forecasts, principally to avoid having eased excessively, should a quick recovery develop.

While it is difficult to discover any unfailingly applicable technical objectives of central bank policy, perhaps the most convenient single measure is net bank credit creation or contraction. In a year like 1956, where restraint was unquestionably appropriate, bank credit rose 2.6 per cent. In 1954, the increment of funds arising from bank credit expansion amounted to 7 per cent, which was a sizable injection of new funds, considering the nature of the recession that year. Focusing attention on bank earning assets, as contrasted with demand deposits and currency, has the advantage that shifts between time and demand deposits would not be a matter of explicit concern except for their effect on required reserves. One minor benefit of this criterion is that it indicates the relatively small direct influence of the central bank over the aggregate supply of lendable funds, which helps to put in perspective the role of the central bank in influencing broad secular movements in the level of interest rates.

Once such a guide is used, the view that the Federal Reserve System should "pull out all the stops" early in a slump loses its attraction; for such a policy would clearly accentuate cyclical variations in the level of interest rates, besides creating the requirement of a correspondingly restrictive policy when the economy subsequently turned toward full employment, in addition to the previously mentioned problems of diagnosing the nature and extent of current cy-

clical shifts. The extreme variation in interest rates also is unsettling in its effect upon real investment.

5. Neglecting the years 1951 and 1952 as being influenced unduly by the events of the Korean War, the first problem of flexible monetary management in the postaccord era relevant for this paper emerged in 1953. It is clear that the first effort of the Treasury in the direction of a major rearrangement of the federal debt, coupled with uncertainty as to the degree of central bank restraint, contributed to the stringency in the money market in the late spring of 1953. Direcly afterward, the System reversed its policy even prior to the cyclical peak in July.[2] From mid-1953 through 1954, bank reserve positions were fairly easy and credit expansion rapid, and this created, in conjunction with Treasury debt-management policy, bank liquidity sufficient to delay the effectiveness of the monetary restraint initiated in 1955.

In view of the substantial holdings of short and intermediate governments held by the banking system when the boom developed in 1955, the vigor of the revival warranted more aggressive monetary actions at that time. The position taken earlier in this paper with respect to the likelihood of recurrent cyclical swings suggests that, had the volume of credit creation in 1954 been somewhat less, the gradually increasing pressures on the banking system during 1955 would have been more effective. The point also needs explicit emphasis that debt-management policy is a partner of considerable importance in influencing money-market conditions and that increased offerings of long-dated securities in 1954 would have increased the effectiveness of monetary control in 1955. While it is doubtless correct that any major funding operations, even during recession periods, will place a floor on long-term money rates, the existence of a large short-term debt creates liquidity options which, at least temporarily, exempt the banking system from effective monetary control.

In early 1958, Federal Reserve actions created a sizable base for monetary expansion, although the Treasury, in issuing long-term securities, avoided the creation of excessive liquidity. Again, the volume of available reserves was increased consistent with a more pronounced recession than the one which actually occurred. However, it was widely believed that the recent slump was more serious than its postwar predecessors; if such a diagnosis was implicit in Federal Reserve actions, this view was not held solely by the central bank. The position taken in this paper emphasizes the need for cau-

2. Geoffrey H. Moore, *Measuring Recessions* ("Occasional Papers," No. 61 [New York: National Bureau of Economic Research, 1958]).

tion in deciding upon large-scale monetary expansion, and, for this reason, a policy of rapid money creation should await evidence indicating not only a pronounced decline but also a decline which is not quickly self-reversing. To behave thus presupposes some high degree of confidence that effective control mechanisms will insure against the pronounced cyclical swings whose elimination the modern world rightly demands.

6. To strike a satisfactory balance between the objective of long-term stability and the desire to avoid excessive fluctuations in the short run, the conditions of the modern world suggest that we avoid an asymmetrical attitude toward the control of the trade cycle. With monetary measures and even more strikingly in the case of fiscal policy, there has been a demonstrable tendency toward relatively more rapid and pronounced actions to deal with slumps than with cyclical expansion. Each successive cyclical experience has given added confirmation to this proposition, and the most pressing contemporary stimulus in the direction of secular inflation very likely arises from this source.

Of course, one can hardly question the view that vigorous fiscal and monetary measures would be forthcoming in the event of prolonged and severe downturns. While needing emphasis, this proposition occupies a subordinate position in the kit of stabilization tools —very important when required, but infrequently used. But in an era in which expansion, full employment, and inflationary pressure have been predominant in the annals of aggregate activity, the economics of monetary and fiscal expansion must be placed in perspective. Thus, from the end of World War II to July, 1957, the economy was rising for 117 months and declining for only 32.[3] During each cyclical experience, moreover, the periods of expansion were more prolonged and the contractions more abbreviated than their average duration in 24 cycles from 1854 to 1954. Needless to add, this experience compares favorably with the events of the equivalent post–World War I episode. While 3 cycles represent a small sample, acting more vigorously to contain slumps than inflationary movements creates the climate for persistent inflation.

This point of view is not equivalent to the discredited doctrine that a pool of permanent excess unemployment is a necessary condition for the maintenance of a viable economy. The argument of this paper rests, instead, on the notion that waves of expansion and contraction are a continuing feature of the economic process. Granted this prop-

3. *Ibid.*, p. 260.

osition, the relevant concept of stability encompasses a time period of sufficient duration to include not only the full cycle but more probably a succession of such cycles, which in practice means the restoration of the classical long run to a position of considerable importance in discussions of economic policy objectives.

In any event, even the most "enlightened" policies could hardly hope to prevent temporary, short-run increases in unemployment. Should such an effort nonetheless be made, the problem of dealing with price increases during the upswing would become critical. In a world alerted to the impact of recurrent inflation, maintaining stability under these circumstances would be highly unlikely.

Conclusion

In this paper the thesis was adopted that the objectives of stabilization policy can be achieved if they are defined broadly enough to encompass temporary and moderate fluctuations in output, employment, and prices. This entails the development of policies during each phase of the cycle that do not create an exaggerated monetary reaction to existing circumstances and in turn complicate the stabilization problem in the subsequent period. There are many respects in which we have traversed merely the early part of what one may hope will be a long voyage of discovery. In building a workable tradition of stabilization policy, increased understanding is required not only on the part of the central bank and the Treasury, which are responsible for the monetary aspects, but also from the Congress. Of course, all decision-makers, particularly those participating in financial markets, have a role to learn. And ultimately the public, if these policies are to be effective, must be convinced that these various control devices are the best and least offensive method of providing the framework for sustained high-level output and employment in an environment of price stability over the long run.

There will, no doubt, continue to be revisions of policies as new lessons are learned, a characteristic perhaps inherent in the nature of the economy. In the field of policy we need to appraise constantly the relative advantages of the various tactics which might be adopted in maintaining a broadly stable economy. This paper emphasized the advantages of a symmetrical approach, but this ultimately rests on an act of faith in the efficacy of existing control devices. These unsettled questions indicate the need for further examination of the aims, methods, and limits of current policies.

DISCUSSION

DONALD C. MILLER:* This interesting and instructive set of papers has some points of disagreement but, in general, support and commend the monetary policy activities of recent years. Culbertson has given a concise, accurate review of the period since the accord. His general observations setting the background for discussing the recent performance of the Federal Reserve are well taken: differences among economists over the theories of montary policy and over precise goals and means to reach these goals are such that many discussions evaluating a performance record run into difficulty. Levin, too, notes this problem of reconciling conflicting views of monetary action, since each point of view seems to carry with it an implied approach. Haywood states the broad general objectives of Federal Reserve policy—maintenance of general price stability, promotion of full employment, and the fostering of long-run growth of the economy. I believe that all three writers would agree on these broad generalizations as to what the Federal Reserve has been trying to do, and all also think that on this basis the System's record has been good. I share in this conclusion. Thus it is difficult to find many basic points of disagreement.

There are some points of disagreement, however. Culbertson's paper, for example, emphasizes the success of the System in controlling aggregate demand over the period and has relatively little discussion of the specific problem of price stability. The long-run implications of the latter are disturbing to me and especially the question of the adequacy of Federal Reserve techniques to handle the recent varieties of cost-push inflation. Levin and Haywood are also more specifically concerned with this difficult area.

Levin voices this concern in the theme of his paper: we are much more prompt and aggressive in dealing with slumps than inflation, and this attitude has resulted in a tendency toward secular inflation. Thus he cautions against large-scale monetary expansion to combat all economic slumps because of the dire consequences that may follow in the subsequent upturn.

Haywood, addressing himself to the adequacy of Federal Reserve instruments decisively to influence the economy, expresses similar concern. His scorecard on the potency and success of Federal Reserve powers and actions reads very well except for the one point

* Continental Illinois National Bank and Trust Company.

that the System has been impeded in using its full powers to restrain monetary expansion. Monetary policy does face a difficult problem in this area—at times it alone of the various policy approaches seems to be facing the problem and will surely be widely judged on the basis of its success in this key area of stabilization policy.

Culbertson's reading of the policy record points up the success of the System over the period and also correctly notes the fortuitous combinations of circumstances that, on occasion, come to the aid of the System and in retrospect make an envious record. This review of the period finds little fault with the flexibility and broad scope of System ease or tightness as exercised through utilization of open-market operations. The easing and tightening of member-bank reserve positions over the period corresponded closely to countercyclical goals. It is true that there were several false starts at easing in 1956, but on each occasion the System recovered quickly and over-all did a better job than if preponderant outside advice and criticism had been accepted. Culbertson is more critical of the two other major arms of System policy: changes in reserve requirements and in the discount rate. I agree only with the latter criticism. He questions the reductions of reserve requirements in the summers of 1953 and 1954, feeling that this involved a commitment to the future and that the System gave away its initiative to tighten at a future time. This seems to me to overlook the massive potential and flexibility of the open-market function. In each case, there was a measurable need for reserves to finance large Treasury offerings, and further need for reserves to meet credit demands could be anticipated on rather firm grounds. If these expectations had proved wrong, open-market operations could easily have offset the reserves supplied. The chunks of reserves supplied by reductions in reserve requirements must usually be partially offset in any event at the time of the change, in order to smooth out the operation. If there is a measurable demand for reserves plus an expected need and if reserve requirements on other grounds are "too high," then the reduction can be carried out quite nicely when combined with the scalpel-like precision of the open-market function.

On the other hand, I agree with his criticism of the use of the discount-rate mechanism. The basis of this agreement is the same as the basis of disagreement on the question of reserve requirement changes—i.e., the tie-in with the open-market function. Culbertson mentions the "surprise" discount rate moves in August and November, 1957. To this he might well have added the most recent boosts

in the fall of 1958. These changes were made without prior smoothing adjustments in open-market operations. As Culbertson points out, there are few times when policy needs are sufficiently clear-cut to call for such abrupt moves. If the time-tested approach of gradually shifting the supply of reserves before moving the discount rate is abandoned, the System and the Treasury must be prepared to see much wider swings in security markets and thus more difficulty in marketing Treasury securities. Such developments would then bring in much more of the undesirable kind of speculation to the government market, despite the severe losses experienced last summer. The guessing game of when and how much the discount rate will change would assume increasing importance, and expectational factors would assume increasing importance in governing interest-rate movements relative to other underlying supply-and-demand factors.

In terms of the potential of the discount-rate mechanism, Haywood finds that its use in combination with other policy devices affords the System adequate power to deal with member-bank borrowing in periods of restraint.

One of the most interesting areas of disagreement in these papers arises over the question of timing anticyclical monetary moves. Both Culbertson and Levin call for symmetrical action over the course of the cycle, with Levin pointing out this is not what we have had but is what we do need to curtail long-run inflation. The difference arises over the rapidity with which easing or tightening policy steps are made. Culbertson calls for "moving early against a reversal of economic developments and then holding policy relatively steady." Levin, on the other hand, places "a premium on gradualness during the 'normal' sequence of expansion and contraction." He calls for the "gradual and persistent application of monetary techniques" and is especially concerned if the growth of bank credit is greatly accelerated immediately following the downturn of economic activity. On the face of these and other statements, it would seem there was basic disagreement over the manner in which policy actions should be applied. The question of timing such actions, of course, is crucial.

I suspect, however, that these differences are more apparent than real. Both writers are careful to point out the dangers of basing policy moves on precise forecasts of changes in economic activity. Culbertson states in his review of the policy record that the System is to be commended that its policy shift in the 1953 recession was not based

on a forecast of the recession. He calls for prompt action, once an existing downturn or upsurge is clearly recognized. The difficulty of this approach is that most of the time the policy-makers as a group are not completely sure of the position of the economy and the degree of ease or restraint that is called for. In general, Federal Reserve countermoves have been bold, once a clear-cut picture developed. In evaluating a specific chain of economic events, despite their apparently different approaches, Culbertson and Levin might actually arrive at similar policy-timing decisions. In any given situation the specific action that should be taken depends on a vast array of factors requiring careful evaluation. This is to say that the application of monetary policy remains an art.

Culbertson admits that a policy following his line of quick attack is difficult to apply in practice. He properly suggests, however, that, once pronounced policy moves have been undertaken, policy must then be guided by close observation of many indicators, such as interest rates, credit conditions, and deposit behavior. It could be added that more specifically, as a particular phase of a cyclical movement ages, it is necessary not to become preoccupied with a free reserve target or achievement of a particular free reserve level. This most valuable indicator and guide assumes many different meanings over the course of a cycle, despite similarities in numerical volume. After this careful pointing out of the many variables that go into the procedure of policy-making, it is a little disturbing to find Culbertson near the close of his paper toying with the idea of using money-supply data as sole criterion for short-run policy moves. I do not think this kind of automatic policy approach feasible. Haywood also is concerned over the adequacy of our ability to control the quantity of money, and he swings in the other direction, calling for additional techniques that do not rely upon the manipulation of the quantity of money.

The problem of timing and flexibility of monetary policy is perhaps more complicated by the functioning of the other arms of governmental policy than is noted by the writers. Culbertson speaks of the difficulties experienced by the Federal Reserve due to extensive Treasury financing operations. In recent years the policy of remaining relatively neutral during Treasury financing periods has meant extended periods of Federal Reserve inaction or at times accelerated action made necessary by an approaching Treasury operation. The size and frequency of Treasury financings and their potential impact on the money and securities markets through which System

policy operates have been among the key factors influencing Federal Reserve decisions—especially as to timing.

The debt-management activities of the Treasury undoubtedly have received more than their proper share of the blame, however. Complications in money and capital markets and crises in debt-management activities arise most frequently when fiscal policy is not performing its proper countercyclical function. On this point it is difficult to agree with Levin's optimism over the countercyclical role that fiscal policy has played and can play. Indeed, in recent years, "fiscal actions have demonstrated their potency" at times by forcing monetary policy to work under adverse over-all conditions brought about the procyclical budgets. In periods of inflation the financing of budgetary deficits on top of the frequent refundings occasioned by the large volume of one-year debt has led the debt managers into one crisis after another. The flexibility and timing possibilities of monetary action are closely circumscribed by the posture assumed by the other policy instruments.

Haywood broaches this subject from the point of view of the adequacy of Federal Reserve powers. He finds the System lacking in its efforts to control monetary expansion because of its concern over the state of the governmental securities market and the financing problems of the Treasury. This seems to me to be placing the blame on monetary policy for shortcomings in other policy devices. The System has a proper concern over the condition of the securities and money markets and over the state of the Treasury's finances, and its actions are influenced by these considerations. The impediment has been one, as noted above, of mainly influencing the timing of Federal Reserve operations. In terms of the extent and massiveness of Federal Reserve moves, the record shows a willingness to move in adequate size. Reflecting this, the record also shows flexibility in the interest-rate structure far beyond that held feasible before the accord.

Haywood writes that the System's concern for the government securities market stems from susceptibility of the System to political pressures. Here he is wrong. This market is the avenue through which much of System policy operates and the one in which the Treasury must float its obligations. It must be given proper respect, but its welfare is secondary to the broader aims of System policy. Concern for this market and possible political repercussions were not the limiting factors in Federal Reserve tightening in 1955–57. Culbertson finds the record of this period quite good, and I agree.

The limiting factor to more aggressive tightening over this period was a lack of conviction that the performance of the economy called for more at any given time. The same holds true for Haywood's point on the Federal Reserve as a lender of last resort. Decisions to tighten are made on very broad terms, and limitations on the aggressiveness of such action are reached on grounds much broader than any concept involving abandonment of the central bank's responsibility as lender of last resort. The art of central banking again appears in Haywood's conclusion that "apt timing and modulation of policy actions may very well result in a tolerable resolution of the conflict."

Haywood's observations on the success of System operations in combating monetary contractions provide a good basis for some rethinking of the relative effectiveness of System action over the course of the cycle. Also his findings as to the role played by financial institutions outside the direct control of the Federal Reserve are encouraging. (And I'm sure are agreeable to Mr. Culbertson.) With respect to his concern over the functioning of the federal funds market, the rapid growth of this market in recent years should be noted along with the development of the repurchase agreement. Under these conditions, such mobilization of funds can be viewed as having the result of spreading the effects of Federal Reserve moves more rapidly and more pervasively throughout the economy.

ELMER WOOD:* There is a great deal that I agree with in these fine and stimulating papers, but, as the time is short, I shall give most emphasis to points where I feel some disagreement.

One thing that surprised me a little was that practically no attention was given to the "bills-only" policy. But, since the papers do not go into that, I shall not either.

Treasury operations and monetary control.—One question which they raise is whether Treasury debt management has always given the support that it should to monetary policy. Doctor Levin thinks that the Treasury should have brought out long-dated securities in 1954; Professor Culbertson thinks that it should have done so from late 1954 through early 1956. Aside from the question of whether this entire period was a good time to absorb liquidity, it seems to me that we should not expect a strong countercyclical policy from the Treasury except where we are dealing with real emergencies. The problem is to govern the attractiveness of debt assets as compared

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with that of non-debt assets, and the Federal Reserve can do that within wide limits by governing the rate structure of government securities and by influencing the rate structure of private debts. In controlling the maturity structure of the government debt, the Treasury can then move gradually in the direction of what seems to be the somewhat longer-run requirements of the economy.

Another question about Treasury operations is whether the necessity of maintaining a stable money market during offerings of government securities limits the freedom of action of the Federal Reserve to an important degree. All the papers consider that it does.

There is a problem here: the Treasury should not require a temporary freezing of the market too often. One way to remedy the situation would be for the Treasury to sell securities with a maturity up to twenty-four months on an auction basis. It could then come to the market less frequently with securities offered at a fixed price.

But the problem seems to me only a minor one. If we believe that changes in the money market work their effect on the economy, not instantly and statically but only gradually and cumulatively, there seems no need for changing rate levels every few days in response to every change in the business outlook. It is true that rates have changed very frequently in recent years under the ideology of a free-money market, but I question whether such frequent changes, and with so great an amplitude, have played a useful role. My conclusion here is that the Treasury can be in the market on a negotiated basis fairly often and still leave room for the necessary adjustments in monetary policy.

In this connection I agree with Doctor Levin's recommendation that, aside from serious emergencies, Federal Reserve policy should shift very gradually and that the "appraisal of economic conditions requires validation by the passage of time."

I should not criticize the rate reductions of 1953 and 1958 on this score, however, because they were correcting earlier mistakes.

The discount mechanism.—How important a role should be given to the discount mechanism? I am in sympathy with Culbertson's proposal to give it a subordinate position. In the first place, the use of the volume of discounts as an important gauge of monetary pressure tends to cause the neglect of a better gauge—the behavior of market rates. Second, changes in discount rates are awkward to administer, especially if they are expected to symbolize changes in policy. In practice, policy changes are decided on by the Open Market Committee and transmitted to the boards of the regional

banks by the presidents, and such a procedure requires delicate handling by all the parties concerned. Third, we do not need the discount rate as a symbol of policy or for its shock effect. From various angles, therefore, it would be desirable to keep the Federal Reserve discount rate well above the Treasury bill rate, permitting rate changes to confirm in a routine way a policy already practically in effect. Such a procedure would also make it easier for the Reserve banks to control the use of the discount privilege by individual commercial banks.

But we should be under no illusion that the market rates would reflect the natural conditions of supply and demand in the market. They would reflect the degree of monetary ease or pressure made effective by the Open Market Committee. The question is simply one of procedure.

The volume of deposits as a measure of Federal Reserve influence.—Toward the end of his paper Culbertson concludes that the Federal Reserve officials could avoid the laborious attempts to adjust credit conditions to the requirements of the economy if they would adopt a simple rule of increasing the money supply at a predetermined steady rate, omitting procyclical variations. Too much attention, he believes, "has been lavished on the procedures, the mechanics, the drama of Federal Reserve control, and too little has been directed to the behavior of the basic variable [the money supply] that is being controlled."

The volume of deposits, in my opinion, is not a good measure of Federal Reserve influence at a given time. The public is permitted (and properly so) to take such balances as it chooses, with the Federal Reserve governing the terms of monetization. The volume of economic activity and the cost-price structure respond only slowly and cumulatively to monetary conditions, and that is why the volume of deposits, which is integrated with the level of spending, shows a similar short-term imperviousness to Federal Reserve action. Experience has shown that the terms on which debts can be monetized are the best indicator of monetary pressure which the authorities are causing at a given time.

Suppose the Federal Reserve ignored interest rates and tried to control the amount of deposits. Whatever actually happened to the quantity of money, there would be violent changes in monetary pressure, since the demand for balances has limited compressibility, and, at times, it would change perversely.

But would not the volume of deposits serve as a longer-run cri-

terion of policy? To attempt to use it as such would only mean the partial ignoring of ultimate results that have a practical importance for us—the level of activity and the movement of prices.

I think the people in the System do have essentially the right approach (see, for instance, the prepared statement of Robert Rouse, manager of the Open Market Account, *Hearings on Monetary Policy: 1955–56*, by Subcommittee on Economic Stabilization, Joint Economic Committee [December, 1956]; also Robert Roosa, *Federal Reserve Operations in the Money and Government Securities Markets*). They watch to see what monetary pressure they are creating day by day, and then they check their gradual progress to their more ultimate goals—or what seems the best compromise among them. To examine procedures, to discover the timing of the various responses to administrative action—these are not mere drama; they are the essence of the scientific method.

Financial intermediaries.—Professor Haywood raises the question whether the non-banking financial institutions increase the difficulties of control by the Federal Reserve. He concludes that they do.

That the credit intermediaries have greatly facilitated the growth of debt there can be no doubt. And they certainly have an important influence on credit availability in particular lines. But I do not believe that they can thwart a policy of general monetary ease or pressure. The Federal Reserve has an unchallengeable control over the terms on which bank reserves will be created and therefore on the terms on which debt instruments generally can be turned into cash. During monetary contraction the insurance companies and savings and loan associations will lower the prices they will pay for bonds and mortgages about as quickly as the banks.

Perhaps the reason why it seems to many people that the credit intermediaries avoid the effects of monetary pressure is that the volume of their loans is not directly and immediately responsive. The activities of these institutions are geared into those of the rest of the economy. If the public continue to have large incomes, buy large amounts of life insurance, and increase their savings and loan accounts, these institutions will have large amounts to lend. But this does not indicate that the less favorable terms for exchanging debt instruments for money are not gradually and cumulatively reducing the apparent advantages of business outlay and changing the business climate. We should not expect economic activity generally to respond statically to a change in monetary conditions.

I conclude that the non-banking financial institutions can in no

way prevent the Federal Reserve from causing as much tightness or ease of credit as seems in the public interest and that it is unnecessary for their purposes to have a peremptory control over the volume of lending.

How tolerant should we be toward depression?—Levin warns us that "waves of expansion and contraction are a continuing feature of the economic process" and that we should avoid taking an asymmetrical attitude toward them in framing monetary policy. I see the force of his idea that we cannot eliminate every temporary increase of unemployment without causing inflation. Yet, as I read certain parts of his paper, it seems to me that he is going back to the idea that depressions are a natural development and inevitable. To me, they are natural only in the sense that they are economic history. But a lot of other things from the past have been changed. For one thing, we have gotten rid of the gold standard as a working system, which certainly played an important part in the liquidations of the past.

What we need now, I think, is not a belief that depressions are to a certain extent a natural part of the economic process but a belief in economic victory, a will to press on without worrying too much about the dangers along our flanks. Policing the economy with unemployment is not the only way to deal with upward price pressures.

In conclusion, let me say that I have enjoyed reading and hearing these papers, and I believe that the writers have discussed with skill things that are of great importance.

PAPERS ON BUSINESS FINANCE

THE VALUE OF THE CALL PRIVILEGE*

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ONE OF THE most controversial problems in the financial area today pertains to the right of a borrower to repay his debt prior to its contractual maturity. The blood-pressure readings of the interested parties tend to correspond with the general level of interest rates. When rates are high, the value to a borrower of having the right to call the loan to effect interest savings at a later date is increased. At the same time, the value to an investor of the high yield on new issues is increased, and he is eager to protect the maintenance of this income throughout the entire contractual period. On the other hand, when rates decline, the value of the call privilege on new offerings declines because the possibilities of any substantial savings to the borrower from refunding or of loss of income to an investor as a result of redemption prior to maturity is correspondingly reduced. It is the interest saving–interest loss aspects of the controversy on which the arguments have been focused, but, strangely enough, in the various resolutions of these conflicts of interest to date, there has been no attempt to measure the relative importance of the factors involved other than by an intuitive approach.[1]

The call provision is important to borrower and lender in almost every long-term loan agreement in the real estate, corporate, or gov-

* This paper by Willis J. Winn and Arleigh Hess, Jr., the following paper by Eli Shapiro, and the discussions by J. Arnold Pines and Marvin Chandler were presented at a meeting of the American Finance Association in Chicago on December 27, 1958. The program was under the chairmanship of John J. Scanlon, American Telephone and Telegraph Company.

1. A study is now being completed by the Wharton School, sponsored by the Life Insurance Association of America, in which, for the first time, the value of the call privilege has been quantified. In this study, the theory of the value of the call privilege has been developed, and the market experience of various types of issues over the last 32 years has been explored, comparing the yields of immediately callable issues with bonds having different degrees of restriction on callability. As a result of this study, issuers will be able to estimate in dollar terms just how much the right to call is worth to them under specified conditions; lenders will be able to estimate how much higher a yield they can demand in return for granting the right to call. Preliminary results indicate that the call privilege is a valuable right, which the market has consistently undervalued. Today's paper, however, is not a summary of the Wharton School study.

ernmental fields, whether the agreement takes the form of a bond issue, mortgage loan, lease, or even a preferred stock offering. For example, the borrower may need or desire to accelerate the payment on his debt if his earnings increase faster than anticipated or if assets are liquidated in the normal course of business and the cash thus accumulated can be used most profitably in the retirement of debt. The borrower may desire or be required to adjust his capital structure to changing business conditions. Changes in the tax structure, in investment preferences and in market prices of securities, in the product mix, and in costs and earnings expectations of the firm also affect the capital requirements and the financial alternatives available to the firm. Sometimes the terms of the loan agreement restrict the capitalization structure, the volume and type of additional debt which can be issued, and the right to sell assets or to buy or merge with other businesses. Any of these developments may make it desirable or necessary to modify the original terms of the agreement or to eliminate the debt prior to the maturity date. Accompanying these considerations and often overshadowing them is the fact that the cost of new money to the firm may be much lower than is currently being paid on outstanding issues, and substantial savings can be effected for protracted periods if the maturity of the debt is extended.

On the other hand, the investor bases his operations upon the expectation that the issue will remain outstanding until maturity. In some instances he, in turn, assumes long-term obligations, and any acceleration in payments poses reinvestment problems. If attractive alternative investments are not immediately available, he may lose income in the temporary use of these funds, or be forced to lower the quality of his holdings. His investment return may be reduced in the long run if the prevailing yields are below the rates paid on the redeemed issue.

Except where yields are above the rate received on the issue being refunded—and experience has shown that this is not likely—prepayment benefits the borrower at the expense of the lender, and callability therefore presents a potential conflict of interest which must be resolved when the security is issued, not at the time when the borrower realizes a need to redeem his debt. If no contractual provision has been made for prepayment, any effort to renegotiate the terms of an outstanding obligation may pose virtually insurmountable difficulties, interminable delays, and very heavy expenses for all interested parties.

Consequently, the conditions and terms under which the issuer may repay all or part of his outstanding obligations before maturity are included among the provisions of loan agreements. This provision is often referred to as the "redemption provision" or the "call privilege." If the price that the issuer must pay to redeem his obligation is above the face value of the obligation, the issue is said to be "callable at a premium"; otherwise the call price is established at par. Sometimes the issue may be called at any time after date of offering. When the privilege cannot be exercised prior to a specified future date, the issue is said to have a "call deferment." Many issues freely callable at a low premium for most purposes have high premiums and/or call deferments of five or ten years where the purpose of the call is to refund the debt at a lower interest cost.

It is interesting to note the extent to which the desired financial flexibility, blocked by call restrictions, may be obtained through other terms of the agreement. For example, the sinking-fund provisions of some outstanding indentures permit the application of the aggregate of these funds from all outstanding issues of the company to any single issue. In other instances, the contingent sinking-fund provisions permit very rapid debt amortization, while at the same time the issuer may be borrowing to finance his continuing or expanding operations.

The option clauses, particularly in lease agreements, allow far more financial flexibility than is provided concurrently by the call provisions in the same document. While, on the one hand, the transaction cannot be refunded through the exercise of the redemption clause, other clauses relating to sinking funds and purchase of leased property, for example, may be employed to achieve the same result. In still other instances, while the prohibition against refunding specifically states that no bonds may be issued to obtain funds to retire outstanding debt, there is nothing in the agreement, except inferred intent, to prevent the issuer from using bank borrowing, an equity issue, or a sales-leaseback transaction to achieve the same end. The limits on such possibilities are established only by the ingenuity of the legal and financial experts engaged in drawing up, or operating under, the provisions of a specific loan agreement.

The two simplest resolutions of the call problem, at opposite extremes, have been (1) the extension of the right to the issuer to call the loan at par at any time and for any purpose and (2) the complete prohibition of the right to call for any purpose for the life of the loan. The former solution will give rise to no interest saving

or interest loss to borrower and lender if market rates do not fall below the offering yield of the issue before it matures. While this result may actually occur, it is not likely to be anticipated at the time the loan agreement is made. In fact, if the investor were to make this projection of interest rates, it is unlikely that he would enter into the transaction because of the very high probability of realizing increased income through an alternative investment policy. But without the rather extreme assumption about the future level of rates, it is difficult to rationalize the investor's action, since he would not be allowing for, or perhaps not even recognizing, the risk he is assuming in granting the privilege.

On the other hand, implicit in the policy of denying the call privilege for any purpose is the assumption that interest rates, during some period during the life of the loan, will be lower than the prevailing rates. If this is an accurate assessment of the future behavior of rates the investor clearly desires to protect his commitments made at the prevailing rates. Should he feel that a reduction in rates, particularly during the early life of the loan, is highly probable, he should maximize his commitments with full protection against redemption. Under the same assumptions, the issuer should re-examine his financial planning, with emphasis on the timing of various alternative moves. In the majority of instances, there may be little recognition of the underlying assumptions or any attempt to assess the probabilities of the gains or losses that might accrue to either party. Furthermore, preoccupation with the interest-loss aspect of call protection may lead the lender to overlook the rigidity imposed on the issuer, whose operations are restricted by his inability to change his debt structure. Flexibility may be essential if the issuer is to operate successfully. Finally, it is necessary to recognize the psychological value of retaining or denying flexibility, particularly in this world of uncertainty and very rapid change. While complete callability and complete non-callability represent the simplest solutions from the standpoint of the issuer and the investor, respectively, they provide no recognition of the other party's problems resulting from these provisions.

In passing, it may be noted that many problems arising out of the redemption provision would be largely eliminated whenever the interest-saving interest loss issue was not a major consideration, if all obligations were non-callable for any purpose but were freely marketable. An issuer could then repurchase outstanding issues at any time. The problem would be greatly minimized perhaps, even when

the interest rate was the sole consideration, if the security were truly freely marketable. However, this would require a broad distribution of ownership and a trading market for the issue, and neither of these conditions is satisfied in most instances.

An intermediate position is provided by the call deferment. In this category are two approaches based upon different underlying problems. The first focuses on the offering date of the security and assures that no redemption can be made for several years (three, five, and ten years have been the most common limits), while the second is keyed primarily to the final maturity date. In the second instance the privilege is granted only for a short period prior to maturity (two to five years being most common). This policy is best illustrated by the call provisions on certain government bonds.

The first approach recognizes the problems of the investor. The length of the deferment period has been heavily influenced in practice by the fact that the investor is purchasing the new offerings with the proceeds of a sale of his portfolio holdings at a book loss. The investor is encouraged to make such switches if he is confident that the new acquisitions will provide a sufficient differential in yield for a period long enough to recover the capital loss. The higher the loss, the longer the deferral period must be to achieve this end. Consequently, this approach has focused on increased costs rather than representing an assessment of future fluctuations in interest rates. In other cases, where portfolio items have not been sold, large investors, aware of the probability that rates will decline in the future, have simply demanded call protection as a condition of the loan. However, while they have been concerned about rate changes during the period for which they sought deferment of the call, these investors have largely ignored rate changes beyond the deferment period.

The second approach recognizes the problems which may be encountered by the issuer. In this instance the policy is largely predicated on his need to have some latitude in timing the refinancing of an issue. While some small saving in interest on the maturing issue may be effected, the major concern of the issuer is the yield he will pay on his new issue. If there is, for example, a five-year period prior to the maturity date during which he can refinance, his opportunity to achieve a low cost on the new issue is much greater than if he is required to refund at or near the maturity date. It is, of course, true that the issuer could engage in anticipatory refinancing or temporize for months at maturity through a roll over into short-term issues to achieve the same end, but the short-term cost of idle balances or

higher short-term rates plus the added financial uncertainties deter such activity.

Another approach to the call problem permits the issuer to call the issue at any time but makes a charge if the privilege is exercised. The most common charge is a 3- or 5-point premium above par or offering price or a payment equivalent to the annual coupon rate. This additional payment compensates the investor for some of the costs and possible loss of income entailed in the reinvestment of these funds and, at the same time, reduces the financial gain to the borrower of refinancing at lower rates. If the premium is sufficiently high, it may more than nullify any financial gain to the issuer and therefore discourage calls for rate consideration, but it does not deprive him of financial flexibility. In practice, however, the call price has been established by custom and is not related to the gains or losses realized by either party. The periodic reduction of the premium over the life of the loan suggests an implicit recognition that possible interest gains decrease as an issue nears maturity, but the size of the premium is not related to the magnitude of the potential gain. Finally, the call premium does not represent a charge for the call privilege, since the payment is contingent upon the exercise of the option.

Various combinations or adaptations of the call deferral and call premium are presently used. For example, the privilege to call in order to refund at a lower rate for the life of an issue or for prolonged periods may be denied, while calls for any purpose except refunding may be permitted at any time, or after only a short deferment. Another arrangement has been to establish two different sets of call premiums—one applicable to calls for any purpose, the other a supplemental premium which is added to the first if the call is execised to refund the issue. In addition, the call privilege may be deferred for a period of time before it becomes effective on a multiple-premium basis. The main difficulty created by the variation in deferments and premiums according to the purpose of the call is that, in any given refunding transaction, the reason for the call may be subject to dispute. Differences in interest rates are rarely the sole consideration, even if they are often the dominating factor, and a question may arise as to which premium to apply or even whether a call is permitted. Thus the groundwork for extensive potential litigation may be laid in some of the more complicated redemption provisions.

A final method of dealing with the problem of callability, but one

which is not in current use, is to grant the redemption privilege freely and make a specific charge for this privilege. This charge does not take the form of a contingent fee but is added to the interest rate. Under this approach, the issuer is permitted to call his issue at any time for any purpose at par, and for this right he pays a higher interest rate. The charge or compensation differs from the call premium in that the borrower pays whether he exercises the call privilege or not; that is, he pays for the privilege to redeem his bonds rather than for the exercise of the privilege, as in the case of the call premium.

This approach was utilized during the Civil War period when callability was an important issue affecting the market for United States government securities. The terms of the offering were set by Congress, which gave rise to a great deal of criticism by those who felt that members of Congress were not familiar with many of the problems of the securities markets. However, in the late 1860's Congress moved that there be a sharp differential in yield between callable and non-callable issues, with the higher yields offered on the callable bonds. While there is no indication that this differential was based on anything other than an intuitive feeling, it represented a recognition of the problem. A postscript, however, is in order. The experience with the non-callable issue was far from satisfactory from the issuer's standpoint, since the Treasury was later forced to repurchase the bonds at very substantial premiums, ranging as high as 30 points.

During the last forty years only a relatively few security offerings other than federal, state, and local government issues have been non-callable. The majority of new issues has been either immediately callable or has had call deferments for three, five, or ten years. In practically every instance, a call premium was added which was scaled to zero by the maturity of the issue. In the majority of cases, the premium was 3 or 5 points or was made equal to the coupon rate. Finally, an effort was often made to distinguish among call purposes and to apply different restrictions upon each.

During the same period, a drastic shift in the ownership of bonds, particularly corporate bonds, has taken place. The individual investor has declined in importance; the institutional investor has grown in size and also changed in type, so that institutional experience with the call problem has encompassed a continually changing group.

The decline in interest rates during the 1930's was accompanied

by a rising volume of refundings. This volume increased during the World War II period with the improved financial position of business, the almost complete drying-up of new offerings, and the continued monetary ease. While there was increasing recognition of the call problem, there was little to be gained by the investor in insisting on increased protection on the new and refunding issues. Moreover, new investors, many of whom had little or no experience in this area, were entering the market and were, therefore, not particularly concerned with problems of callability. Consequently, when interest rates rose, call restrictions were increased only slightly, but within a relatively few months another wave of refunding at lower rates took place. Since 1956, with the rise in interest rates, there has been a more marked increase in the restrictions imposed upon the call privilege.

It is clear that there has been a growing recognition of the call problem over time by both issuers and investors. The bargaining, however, has focused on the types of restrictions to be imposed upon the right rather than the price to be charged for granting the privilege. In other words, the market has approached the problem of bond redemption largely by determining how far the privilege should extend rather than by granting the privilege and determining how much shall be paid for it. In fact, there is very little evidence that corporate bond issues offered between the end of World War II and the present have reflected in their yields any significant value for the call privilege.

In general, the issues directly placed have had somewhat more restrictive call features than those publicly offered. However, the market for direct placement is dominated by large institutional investors, who, after several adverse investment experiences resulting from an early exercise of the call option, have insisted upon sharp restrictions and even the prohibition of call options for refunding purposes. In fact, some of these investors have stated that they would not buy a freely callable issue at any price. During periods of rapidly rising demand for funds, they have had the bargaining power not only to impose more restrictive call provisions but also to get somewhat higher yields than those obtained on publicly offered issues during the same period. However, since the directly placed issues are not rated, the difference in yield may be attributable in part to quality variations.

This brings us to a consideration of the value of the call privilege. We have seen that free callability has been modified by the use of

the call deferment and the call premium, but there is no evidence that the length of deferment or the amount of the premium have been set by any realistic appraisal of the probable gains or losses of either party but rather by custom or habit.

How much should the borrower be willing to pay for the option to call his bonds before they mature? Obviously, the greater the decline in interest rates and the earlier it occurs in the life of the bond, the larger will be his total interest saving. Moreover, the higher the rates at the time the original issue is sold, the more likely is a decline of any magnitude. The three major factors then—the size, timing, and probability of a decline in rates—determine the minimum value of the call privilege to the borrower.

The borrower may approach the problem of estimating future interest-rate changes by examining the variation in rates over the past few decades. He may ascertain the length of time that was required on the average for a drop of 1 or 2 per cent from an initial level of 5 or 6 per cent or the average change in rates for a specified period after rates were 5 or 6 per cent. Alternatively, he may analyze factors which affect the supply of and demand for loanable funds and estimate how these forces will affect the future movement of interest rates. This method deals more with causes of rate changes, while the former studies effects, namely, the rate changes themselves. The prudent borrower will use both procedures.

Any estimate of future rate changes must be stated in terms of probability, and the probability will vary inversely with the magnitude and the proximity of the change. Therefore, if the issuer decides upon the change which will cause him to refund, he will have to estimate the probabilities (1) that the change will occur in the first year; (2) that it will take place the second year, assuming that it has not already happened; (3) that, if it has not previously occurred, the rate will change the third year; and so on, until the final year of the term to maturity. A twenty-year bond would require a separate estimate of the probability of a rate reduction of a given magnitude for each of the twenty years (the sum of these twenty values would produce the total probability that the given change will take place sometime within the lifetime of the bond).

The issuer must also compute for each year the present value of total interest savings, after refinancing costs are deducted, which would result if a refunding were effected that year. The present value computation for each year is multiplied by the probability estimate for the same year, and the sum of these products is the present value

to the borrower of the right to refund upon a given decline in rates.

If a different change in rates is assumed, the entire process must be repeated, since the interest savings and presumably the probabilities are different. The borrower can determine by the methods given which combinations of magnitude and probability of decline would produce for him the greatest present value of the refunding privilege.

As we have previously noted, an issuer may want to change his capital structure for reasons not connected with interest saving. Mergers, lengthening of maturities, increasing the size of the debt, shifting to equity securities, paying off the debt with accumulated cash are all goals which may be achieved more readily through the exercise of the redemption option. These objectives do not lend themselves readily to quantitative treatment, however, since the increased earnings which a merger, for example, will produce are difficult, if not impossible, to estimate. The psychological security which is experienced by the debtor who knows he can redeem his issue for any reason, even if he does not know what some of the reasons may be or when any of them may become important, is a completely subjective matter, but for some debtors this security may be extremely important.

Since the refunding objective is the only one that lends itself readily to mathematical treatment, we may, therefore, illustrate the computation of the value of the call privilege on the issuer of the assumption that the call will be exercised only for refinancing to lower interest charges. Let us suppose that a $1,000, immediately callable, 20-year bond issue with an earliest call premium of 5 per cent which declines ¼ per cent each year, is offered at 6 per cent; that the issuer decides that he will refund his debt if the rates fall to 4 per cent; and that the costs of refinancing are equal to 1 per cent of the face value of the issue. He estimates on the basis of past movements in interest rates that the probability of a decline in the interest rate from 6 to 4 per cent is one in twelve for the first year that the issue is outstanding; one in six for the second year; one in four for the following year; and one in three in each subsequent year. The present value of the call privilege to the borrower at the time his bonds are issued, computed by the method previously described, would be $118, or more than 10 per cent of the face value of the bond.

This sum represents the minimum value to the borrower of the right to call. To this he must add the value of the right to call for

purposes other than refunding. He must express these values in money terms in spite of the fact that they contain subjective elements. The sum of these values sets the upper limit on the price that the borrower will pay for the right to redeem his bonds at par, at any time and for any purpose. Whether he has to pay this maximum value or not will depend, in part on the lender's evaluation of the redemption option. This leads us to a consideration of the lender's position.

The value of the call privilege to the lender is not the same as its value to the borrower, for several reasons. In the first place, with the exception of the call premium paid for redemption, other costs of the borrower are not income to the lender, and, in addition, he must bear the cost of finding a new use for his funds. Interest loss to the lender will be equal to the debtor's interest gain only if the former reinvests at the same rate as that which the latter pays on his new issues. At the time of issue, the lender's loss is a matter of uncertainty, and the estimates of the size and probability of this loss by the two parties may not be the same. The gains that the borrower may realize through calling to facilitate a merger, reduce debt, or shift to equity financing need not cause any loss to the lender other than reinvestment costs if interest rates have not fallen since the issue was offered. Both parties may place a value on psychological security, but there is no reason why these values should be equal.

Several federal and state regulatory agencies whose objective it is to "secure economies in the raising of capital" for companies under their jurisdiction have followed a firm policy of requiring these companies to issue bonds which are immediately callable or have short deferment periods and which bear a low call premium. They have asserted that these provisions did not raise offering yields and, furthermore, have implied that they would modify their position if the opposite could be proved. In fact, they have granted waivers or modified their position from time to time although they have always insisted that the issuer obtain the maximum flexibility feasible under prevailing market condtions.

Some large institutional investors have contended that the policy of the regulatory agencies has forced them to withdraw from the market for utility issues. The portfolios of these investors show that they have in fact withdrawn from these markets when adequate call protection was not granted, but the call issue may not have been the sole reason for this action. The higher yields available on other security offerings, the need for better portfolio balance or diversifica-

tion, and other investment considerations may have been major reasons for their policy decision. In any case, the withdrawal of certain investors from the market has not prevented the utility companies from successfully selling new issues with call options. Moreover, there has been no marked increase in the yields which can be attributed to the call features. Other buyers, such as pension funds and smaller insurance companies, have bought callable issues. However, to the extent that there has been a net reduction in the demand for these issues because of the withdrawal of some investors from this area, interest yields may be higher than they otherwise would have been. This, of course, cannot be measured.

Institutional investors have also criticized the regulatory policy on the grounds that it favors the consumer at the expense of the investor. Without going into the philosophy of rate regulation, one may raise the question of the equity of greater government assistance to utility customers than to those providing the capital for the companies. However, if there is no difference in yield which can be attributed to the call option, it is prudent policy from the standpoint of the utility companies to maximize their financial flexibility.

Finally, some critics of the policy of the regulatory agencies have pointed out the inconsistency of the position they have taken on callability for securities offered under their jurisdiction and the call policy that the governments have adopted with respect to their own security issues.

If the market set a value on the call privilege—that is, set a price on it based on the risks assumed by both parties—much of the controversy over the justice of the redemption privilege would disappear. At present, we hear considerable discussion over the ethics of what is termed the "one-way-street" effect of the indenture provision which gives the debtor the right to terminate the loan agreement at his own option, while the creditor has no comparable right. If a proper charge were made for the call privilege, the lender would be compensated, and there would be no "one-way street." In fact, the lender would receive a higher yield for granting callability and might never be called out of his loan, and the borrower would pay for a privilege which he might not exercise.

It is not necessary that the option to call be without any restrictions in order that it be evaluated by the market. An issue can be made callable after a deferment period and would presumably have a lower cost of callability because of the deferment. A premium can be employed, and this should also lower the value of the call right,

since it would reduce any gain to the borrower and would offset some or all of the loss to the lender.

We must not claim too much, however, for market valuation of the redemption privilege. It does not solve all the problems faced by the lender. For example, there is still the risk that he will be called out of a loan and have to relend at a lower income. This risk is not reduced at all; instead, he is compensated for assuming it. The borrower, on the other hand, pays for a privilege he may never use. Moreover, since the value of the call privilege is computed on the basis of estimates and probabilities, the realized return to the lender or the borrower from the exercise of the call option may be much different from the price paid for callability.

The only way the lender can protect himself completely against a loss from a refunding call, other than to prohibit it or impose an extremely high call premium, is to require the borrower to pay him the entire savings realized from the refunding for the period of the original issue. This assumes that the lender will relend at the same rate that the borrower obtains on his new issue.

Under this compensating plan, if the borrower called the entire issue which was originally offered on a 6 per cent yield basis and replaced it with a 4 per cent issue, he would pay the investor 2 per cent per year on the face value of the old bonds until their contractual maturity date or a sum equivalent to the present value of such payments. If a bond is retired by the issue of stock or if the issuer makes a net reduction in his debt, the yields on newly offered bonds of similar rating, term, and size of issue may serve as a basis for computing the loss to the lender. Of course, if these yields are higher than that of the redeemed issue, there would be no loss to the investor.

In effect, then, the issuer would have to pay the offering yield on the original issue until its maturity date, even if the issue were extinguished by call long before its maturity. The investor could reinvest his funds at, or perhaps even above, the rate at which the issuer could refinance, and this, together with the differential in yield that he would receive from the original issue, would assure that his income would not be diminished in spite of the call.

While there would be no reason to call merely for the purpose of reducing the carrying charge for the life of the loan, the issuer might wish to take advantage of attractive market conditions to reset his debt for an extended period of time. Moreover, this arrangement would not restrict a call for any purpose. Neither the issuer nor the investor would have to make any projection of future developments

or assume any risk of inflexibility or income loss. No extra premium would be required, and the cost to the issuer would always be directly related to the market conditions prevailing at the time of the refinancing.

This compensating arrangement has one great advantage to the lender which he does not realize from the valuation method, namely, the elimination of interest loss from refunding. If the borrower merely bought the right to refund, he would keep all the interest gain realized from a refunding, and the lender might suffer a loss far in excess of the price he received for granting the call privilege. Since interest loss is avoided by the compensating provision, this arrangement carries no appreciable cost to the lender.

From the borrower's point of view, the compensating procedure has only one important disadvantage, namely, it prevents him from making a purely financial gain through refunding. However, since he can call freely for any purpose, the issuer has complete flexibility, and he can realize any gains, except interest savings, without imposing a cost on the lender.

Presumably, the lender can demand that the borrower pay for this particular type of call privilege, even though the granting of the privilege does not subject the lender to any risk of loss. The value of this particular right to the issuer would be determined by the same procedure as that used to value the unrestricted call privilege, except that there is no interest gain to be considered and therefore no necessity to be concerned about future interest-rate changes.

Whether the market places a value on the unrestricted call privilege or on a call provision which incorporates the compensating arrangement, the very act of evaluation would focus attention on the factors which affect the value of the redemption right and would lead issuers and investors to think of the privilege as a vendible good. This attitude might dispense with some of the controversy over the justification of callability and over government regulation of this privilege. Finally, it might lead to some new method of dealing with the call privilege which would be more satisfactory to all parties concerned.

THE POSTWAR MARKET FOR CORPORATE SECURITIES: 1946–55

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INTRODUCTION

WITH THE CESSATION of hostilities in 1945 the tempo of corporate capital expenditures increased sharply. In 1946, the first full year of peace, plant and equipment expenditures were almost 2½ times those of 1944, the last full year of war. For fixed investment,[1] the ratio of 1946 to 1944 expenditures exceeded 2½. And, finally, for total corporate capital expenditures, including changes in inventories,[2] the ratio almost doubled. In the ten years that followed the close of the war, corporate capital expenditures amounted to almost $230 billion. The vast bulk of these expenditures was for fixed investment. The annual average change in inventories for the decade was less than $5 billion.

By far the major source of funds used to finance these capital expenditures was internal funds;[3] they constituted almost 83 per cent of the total sources accounted for and over 75 per cent of the total uses. The most important type of external funds[4] was the net issue of

* I wish to express my indebtedness to Morris Mendelson, with whom I have written a paper, "A Decade of Corporate Capital Formation: 1946–1955," some of the material of which is contained in this article. David Meiselman and I worked on the derivation of much of the data included in this paper. Numerous people at the Securities and Exchange Commission, the Board of Governors of the Federal Reserve System, and the Department of Commerce rendered invaluable help to me at various times. John C. Dawson gave freely of his help and his data. Finally, my thanks to R. W. Goldsmith and E. Kuh for their suggestions.

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1. In addition to new plant and equipment expenditures, fixed investment includes "other capital expenditures," a flow-of-fund concept that covers corporate purchases of residential land and structures, used-equipment purchases from the federal government, and dealers' margins on new security issues. The term "investment," as used, is not net of depreciation.

2. Changes in inventories are measured as changes in the book value of inventories after valuation adjustment.

3. "Internal" or "inside" funds, as used here, are defined as the sum of net profits before tax, depreciation, amortization, depletion, insurance benefits, tax refunds, and other internal charges, less the sum of federal and state tax payments, renegotiation payments, dividends, branch profits paid, and bad-debt charges.

4. "External" funds, as used here, are defined as the sum of net bond and stock issues, net change in mortgage liabilities, net long-term borrowing, and net short-term borrowing (net of trade credit extended), less the sum of increases in cash, United States and state and local government securities, and other portfolio securities.

securities. This was true of every single year, without exception. And, finally, the most important type of security was bonds. Over the decade, net working capital increased, on the average, by slightly less than $5 billion per year.

The Flow of Expenditures

The corporate sector is not a decision-making organism that responds to changing economic stimuli; rather it is a composite of decision-making units, each of which responds in its own way to changing economic forces. It was decided, therefore, to deal with a reasonable number of groups or sectors, each as internally homogeneous as was possible. A broad group such as the corporate sector is often divisible into subsectors, within each of which the degree of similarity is somewhat greater than that between subsectors. The behavior of the whole sector may then be studied in the light of the different behavior of the subsectors and the shift over time of the relative importance of the various subsectors in each type of economic activity.

With this in mind, the corporate sector has been divided into five subsectors:[5] manufacturing and mining; railroads; electricity and gas; communications; and trade, service, and miscellaneous.[6]

Our procedure will be to examine each of the major flows in turn to see to what extent the expansions and contractions of the all-corporate sector were the consequence of relatively uniform behavior of the component industries and to what extent they were the result of shifts in activity from one industry to another. A clear-cut separation of these two forces is impossible, but an examination from that point of view is illuminating.

To a certain extent, fluctuations in all-corporate total capital expenditures are the consequence of changes in the composition of expenditures. By and large, but not without exception, inventory changes are the volatile elements in total capital expenditures. Insofar as this is so, fluctuations in the latter can be explained largely by the shift in importance of inventories in total capital formation. Changes in inventories are far more important in the manufacturing and mining and trade-service industries. Sharp rises in total capital

5. For the latter part of the decade corporate flow-of-funds data compiled by David Meiselman and Eli Shapiro for the National Bureau's Postwar Capital Market Study (forthcoming manuscript, "Corporate Sources and Uses of Funds, Annual 1950–1955, Quarterly, 1953–1955") are available, and for the first half of the decade we have used data compiled by John C. Dawson, "Fluctuations in U.S. Corporate Investment and Finance, 1931–1950" (unpublished Ph.D. thesis, Cornell University, 1957), Appendix A.

6. For convenience, this sector will be referred to as the "trade-service industry."

expenditures that can be traced to changes in inventories can also be traced to the activity of either or both of the latter two groups.

However, the impact of the fluctuations in changes in inventories on fluctuations in total capital expenditures tends to blur the analysis of the industrial composition of expenditures. For this reason we shall deal with fixed investment and changes in inventories separately at first, after which we shall examine the behavior of total capital expenditures.

A. FIXED INVESTMENT

All corporate fixed investment was already rising when the postwar decade opened. The rise slowed down early in the decade, but expenditures continued to drift upward (Chart I). The upward drift was neither even nor uninterrupted, but, by 1955, fixed investment was proceeding at the rate of $24.5 billion per year compared with an annual rate of $13.7 billion in 1946.

The first interruption of the upward drift occurred in 1949, when fixed investment expenditures fell by $2.4 billion to $17.5 billion. They then rose at varying rates until 1953, by which time they had risen to almost $24.4 billion. The upward drift was again interrupted in 1954, when fixed investment fell by slightly less than $1.0 billion. The last year of the decade was the first since 1948 in which fixed investment by all industries moved in the same direction, or at least in which no industry moved counter to the others. In both the gas and electric and railroad industries, fixed investment remained unchanged at $4.2 and $0.9 billion, respectively. In all the others there was a weak upward movement.

Not all the subgroups shared in the general upward drift in fixed investment. Only the communications industry reached the decadal peak in fixed investment in 1955. In both manufacturing and mining and the gas and electric industries, investment in 1953 exceeded that of 1955 by $0.3 billion each. And, finally, one cannot describe the general movement of railroad fixed investment as an upward drift. The highest level of investment by this subgroup, $1.5 billion, was achieved in 1951. Investment in each subsequent year was either lower or unchanged from the previous year.

B. CHANGES IN INVENTORIES

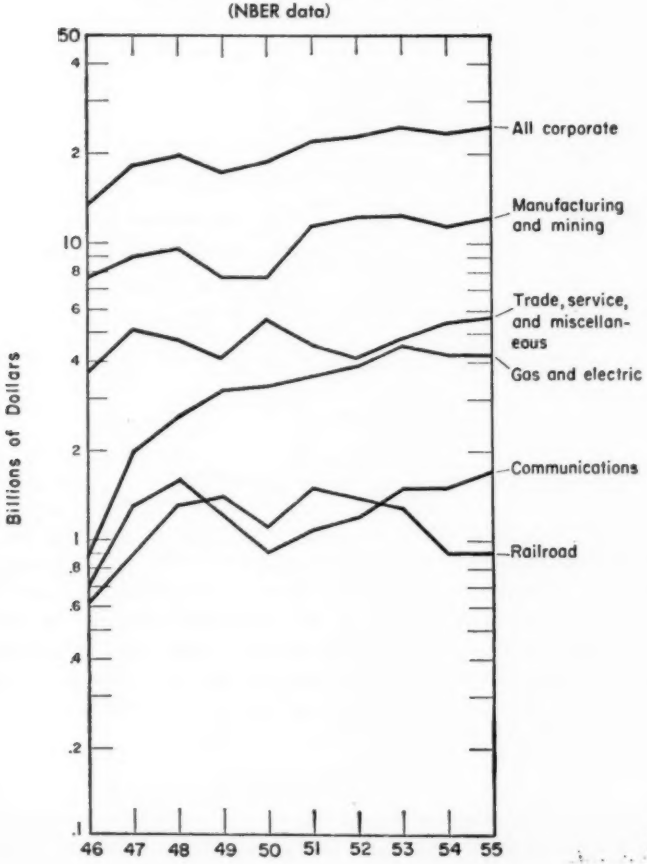
The pattern of investment in inventories is quite different from that in durable capital goods. First, there is no discernible upward drift. Second, corporate inventory investment, with but minor excep-

tion, is almost completely dominated by changes in manufacturing and mining inventories (Chart II). Third, the peaks and troughs of changes in inventories do not occur at the same dates as those in fixed investment.

In 1947 inventory investment by manufacturing and mining and the trade-service subsectors were the same. In 1950 the net changes in the latter were larger. In every other year of the decade the net changes in manufacturing and mining inventories were much more pronounced than those of the trade-service industries. That is not to

CHART I

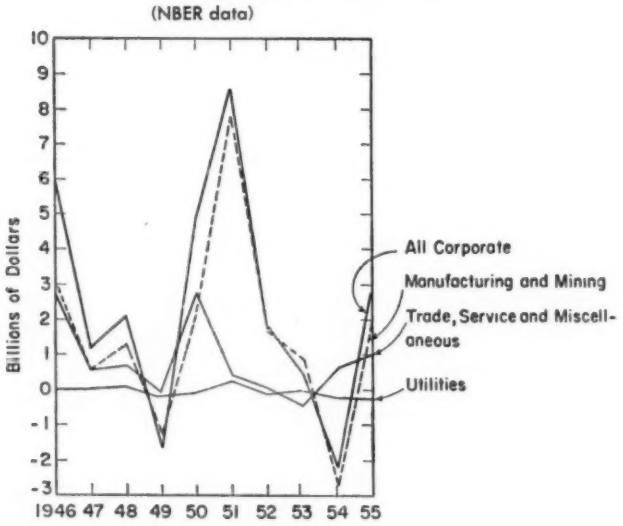
CORPORATE FIXED INVESTMENT BY INDUSTRY



say that the cumulation was greater. As a matter of fact, trade-service investment in inventories rose above that of manufacturing and mining in both 1949 and 1954. In the former year, however, manufacturing and mining decumulated much more than did trade-service, and in the latter year, while the trade-service subsector was adding to its inventories, manufacturing and mining were disinvesting. The domination of all corporate inventory investment by that of manufacturing and mining was modified, but not wiped out, in 1947,

CHART II

CHANGES IN INVENTORY BY INDUSTRY



when total corporate inventory changes fell almost twice as fast as those of manufacturing and mining because trade-service inventory investment fell almost as rapidly as those of manufacturing and mining. Again in 1950, the impact of the rapid accumulation by trade-service resulted in all-corporate inventory investment rising much faster than that of manufacturing and mining. And, finally, in 1951 the fall in trade-service inventory investment noticeably offset the sharp rise in the all-corporate inventory change.

C. TOTAL INVESTMENT

Total investment, influenced as it was by changes in inventories, followed a more volatile course than fixed investments, its major com-

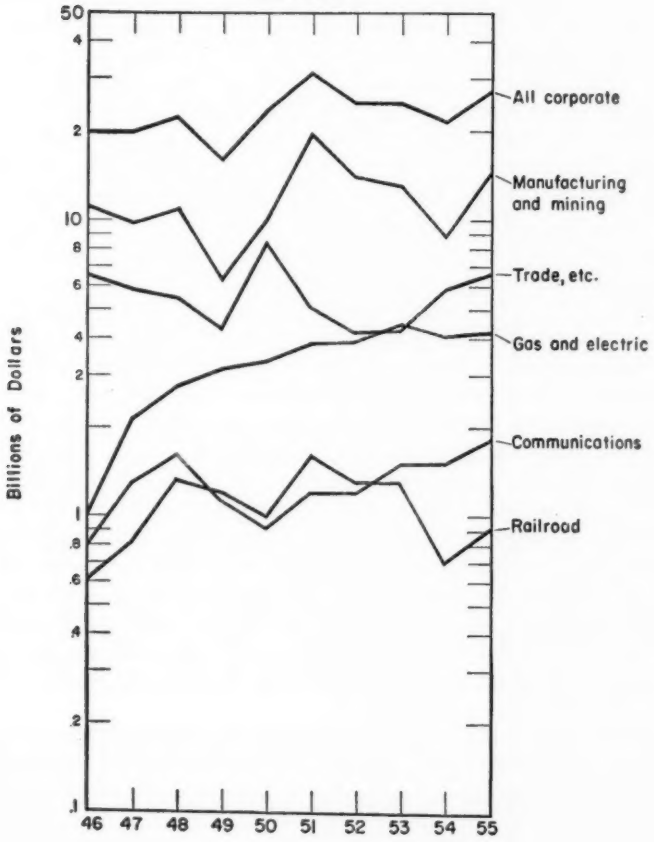
ponent. Both peaks and troughs were more pronounced, and in one instance the influence of inventory changes was sufficiently great to shift the peak to two years earlier. Finally, the upward drift in total investment was less pronounced than the rise in fixed investment.

Expansion and recession, 1946 and 1949.—The influence of inventory changes was sufficient to outweigh the rises in fixed investment by manufacturing and mining and the trade-service subsectors in 1947, so that total investment actually fell (see Chart III). The influence of these two sectors, in turn, was sufficient to offset the in-

CHART III

CORPORATE TOTAL INVESTMENT BY INDUSTRY

(NBER data)



vestment activity of the entire utility group, so that total investment, instead of rising, as fixed investment did (Chart I), actually fell slightly. In 1948, inventories again increased and reinforced the influence of fixed investment, which rose sharply. Thus in contrast with fixed investment, which rose sharply in 1947 and slowly in 1948, total investment fell slightly in 1947 and rose sharply ($2.4 billion) in 1948. It should be noted, however, that the rise in inventory accumulation by trade-service was not sufficient to offset the fall in the fixed investment of that group. The rise of the all-corporate total investment in 1948 was consequently somewhat dampened by the influence of the trade-service subsector, just as was fixed investment.

In 1949, since inventory investment did not move countercyclically, the movement of fixed investment was reinforced and accentuated the decline in total investment. The greatest influence of inventory changes, however, is noticeable in the total investment of manufacturing and mining, where a $4.7 billion decline in total investment, augmented as it was by the especially sharp decline in inventory changes, was noticeably more rapid than the fall in fixed investment.

The Korean period, 1950–53.—The most notable behavior during this period was the sharp upward movement in the early part. Whereas the recovery of fixed investment was rather slow in 1950, total investment rose rapidly. Indeed, in contrast with fixed investment, the rise in total capital expenditures in 1950 was more rapid than in 1951—$7.9 compared with $7.1 billion. The fixed investment of manufacturing and mining, which hardly changed in 1950, is transformed into a sharply rising curve when inventory investment is added to form total investment. In the following year, when the two components reinforced each other, the rise in total investment was even sharper. The rise of total investment in 1951 would have been sharp indeed, had it not been offset by the fall in the trade-service group. In 1952 the slight rise in fixed investment was hardly sufficient to offset the precipitous decline of manufacturing and mining inventory investment. Indeed, even in 1953 a much sharper rise in all-corporate fixed investment was barely able to offset an even milder decline in inventory changes, with the consequence that, although total investment rose again in 1953, the cyclical peak quite obviously occurred in 1951 rather than in 1953, as in the case of fixed investment.

Recession and recovery, 1954–55.—In the following two years, in spite of the out-of-phase movement of inventory and fixed investment of the trade-service subsector in 1954, changes in all-corporate

inventory investment reinforced changes in fixed investment and accentuated the movements already noted in the fixed investment.

The Financing of Corporate Capital Expenditures

The association of specific liabilities with specific assets or even specific classes of assets with specific classes of liabilities is, at best, a hazardous procedure.[7] By their very nature, fixed investments are not liquidated for considerable periods of time; sooner or later they must be financed by long-term funds. Some changes in inventory, on the other hand, are expected to be temporary, and the utilization of long-term funds to finance these temporary needs could easily result in the payment of interest on idle funds by the borrowing firm. Inventories, however, are part of working capital, and net working capital per se is necessarily financed by long-term funds. Since inventory changes are included in both total investment and net working-capital changes, the need for long-term funds can be defined as equal to the latter and fixed investment.

However, financial market conditions may make it advisable to finance long-term assets temporarily with short-term funds. The duration of such interim financing depends upon the condition of the financial markets and expectations by borrowers of how long these conditions may persist. The longer the interval being examined, the less are the analytical problems posed by interim financing of long-term asset acquisitions. Interim financing creates fewer problems for analysis when annual data are used rather than quarterly data; the use of decadal data makes the problem even less troublesome.

A. INTERNAL FUNDS

While inside or internal funds are usually considered long-term funds, the first claim on them is the first liability that matures. If an increase in inventories has to be financed, a firm is unlikely to ignore its till cash on the grounds that the recent increase is from inside funds and is therefore part of long-term funds. While comparison of Charts I and IV discloses a certain similarity in the movements of all corporate fixed investment and all corporate internal funds, the similarity is to some extent the result of offsetting industrial movements, as closer examination will show.

The first and most obvious difference between the movements of

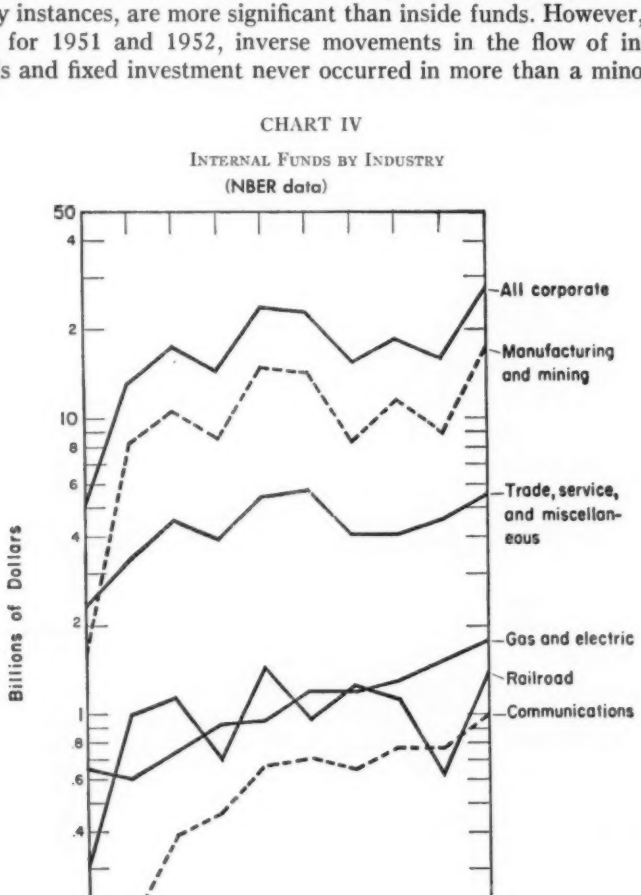
7. See comment by Morris Mendelson in *Problems of Capital Formation* ("Studies in Income and Wealth," Vol. XIX [Princeton, N.J.: Princeton University Press for the National Bureau of Economic Research, Inc., 1957]), pp. 190 and 191, and reply by D. H. Brill, pp. 148 and 149 n.

inside funds and fixed investment is the greater volatility of the former. A relationship between inside funds and fixed investment is more evident in the last three years of the decade than in the preceding seven. The lack of conformity of the first seven years can be interpreted in either of two ways: no relationship exists, or, more likely, fixed investment is also determined by other variables, which, in many instances, are more significant than inside funds. However, except for 1951 and 1952, inverse movements in the flow of inside funds and fixed investment never occurred in more than a minority

CHART IV

INTERNAL FUNDS BY INDUSTRY

(NBER data)



of industries in any one year. If other variables were relevant, as suggested above, they must have been especially important to specific industries. Otherwise, inverse movements would have tended to occur in all industrial subgroups simultaneously.

This observation should be qualified, however. It is quite conceivable that a given factor would have the same absolute influence on all industries, but different relative influences. For example, a rise of $100,000 of inside funds may have the same impact on investment as a fall of ½ per cent in interest costs. Consequently, if interest rates fell by ½ point, industry A would increase fixed investment in spite of a $50,000 fall of inside funds, while industry B would decrease investment if inside funds fell by more than $100,000. Indeed, the number of times that the flows of inside funds and fixed investment moved inversely tended to vary inversely with the relative importance of inside funds. Over the decade, inside funds were largest relative to fixed investment in the manufacturing and mining industry and were of decreasing relative importance in the railroad, trade-service, communications, and gas and electric industries, in that order. There were no inverse movements of flows of inside funds and fixed investment in the manufacturing and mining industries, while there were one, two, and three such inverse movements in the railroad, trade-service and communications, and gas and electric industries, respectively.[8]

Another factor worth noting is that, in spite of the fact that in most instances fixed investment increased, inverse changes in inside funds and fixed investments occurred much more frequently when fixed investment was falling.

In all industries except gas and electric and communications, inside funds at one time or another in the decade supplied more funds than were needed for fixed investment. This occurred most frequently in the middle years of the decade and most strikingly in the manufacturing and mining industry. The latter was the only industry in which inside funds exceeded fixed investment for the decade as a whole.

The degree to which fixed investment can be said to be covered by inside funds varied not only between industries but also from year to year. Except for the communication industry in the first half of the decade and the gas and electric industry throughout most of the decade, inside funds tended to exceed 50 per cent of fixed investment. A rough sort of pattern is detectable in most industries. The ratio of inside funds to fixed investment generally rose in the first half of the

8. Not counting instances in which one series changed while the other did not.

decade, then tended to decline for the next couple of years, and finally rose again in the last years. To be sure, there are breaks in this pattern, but nevertheless, if the charts were smoothed, this type of pattern would assert itself, except in the railroad industry.

In 1946 the dollar volume of inside funds was rather low except in the gas and electric industry. The consequence was a low ratio of inside funds to fixed investment. In the following year the dollar volumes rose to levels more consistent with those of other years, so that the ratios also tended to rise. In the gas and electric industry, the opposite happened. While inside funds did not change much, fixed investment rose rapidly, so that the change in the ratio is quite different from that in other industries.

As was noted, in the first half of the decade, the ratio tended to rise. In most industries, the rises varied from year to year. In most instances and by 1950 the peak had been passed. The peak for trade-service, on the other hand, was not reached until 1951. The date of the subsequent upturns also varied from industry to industry. By 1955 all industry ratios were climbing. In manufacturing and mining and trade-service, the climb had actually begun in 1953. The gas and electric ratio followed in the next year, 1954.

B. EXTERNAL FUNDS

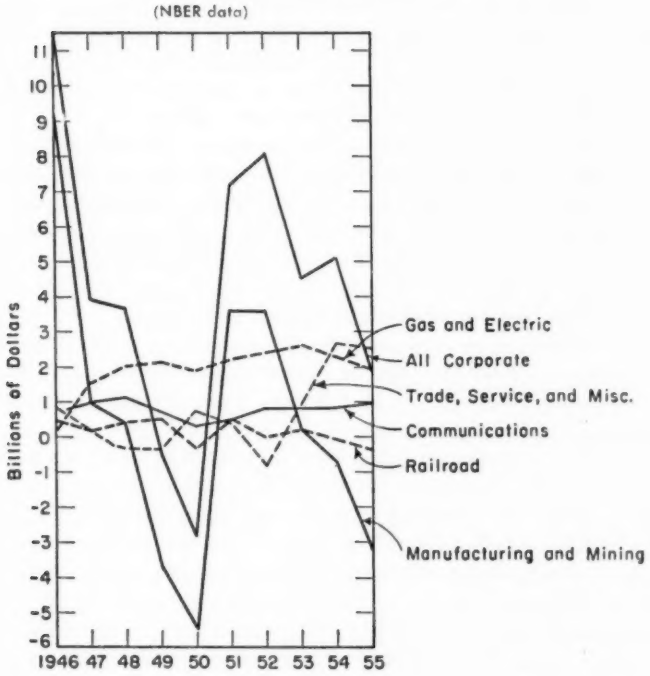
The all-corporate flow of external funds was almost completely dominated by the flow in the manufacturing and mining industry. Variations in the flows of the other industries modified the impact of the manufacturing and mining flows, to be sure, but the all-corporate and the manufacturing and mining flows had roughly similar movements (see Chart V). In general, the external fund flows of the other industries did not exhibit the great year-to-year variations that characterized the external fund flow of manufacturing and mining. Before examining this phenomenon more closely, however, a word should be said about the statistical discrepancy. If all flows were accurately measured, total investment would equal the sum of inside and external funds. The flows, however, are not accurately measured, and the equality seldom holds for the estimates. The differences have been called the "statistical discrepancy," and there are grounds for believing that a major part of this discrepancy is made up of errors of measurement of external funds. The analysis of external funds is therefore subject to some error.

Postwar expansion and recession, 1946–49.—The gap between total investment and inside funds narrowed, in general, throughout

the expansion period, which ended in 1948. It narrowed more rapidly in 1947 than in 1948, but it narrowed nevertheless. The consequence was simple. With each passing year the volume of external funds declined. While accurate as a generalization, the statement is not true of each individual industry. The most noteworthy exception

CHART V

EXTERNAL FUNDS BY INDUSTRY



is the gas and electric industry. Total investment in this industry more than doubled in 1947 and almost doubled in 1948. Inside funds, on the other hand, fluctuated within the narrow limits of $0.6 and $0.8 billion; thus external funds rose from a mere $0.2 billion in 1946 to $2.0 billion in 1948.

A similar, though not so marked, sequence of events took place in the communications industry, where total investment rose sharply in 1947 and less sharply in 1948. In the latter year, the $1.6 billion of

investment was twice that of 1946. Inside funds rose more rapidly, doubling in each year. However, the level was so low in 1946 that the quadrupled level in 1948 supplied only one-fourth of the needed funds. Thus external funds grew relatively less important, accounting for over 90 per cent of the $0.8 billion of investment in 1946 and about 75 per cent of total investment in the following two years.

External financing of manufacturing and mining behaved rather differently; in 1946 almost all their funds came from external sources and amounted to $9.2 billion, compared with $1.6 billion of internal funds. The situation was rapidly reversed, and in 1947 internal funds were over eight times larger than external funds. In the following three years, the decline in the reliance on external funds continued, until in 1950 they amounted to about —$5 billion.

In many respects the trade-service industry behaved very much like the manufacturing and mining group. It will be recalled that the total investment of the trade and service industry declined in this expansive period. Since at the same time inside funds rose, the need for external funds declined. Whereas in 1946 the $0.9 billion of external funds supplied almost one-seventh of the needs, by 1948 this group was actually a supplier of funds of some $0.3 billion.

The most erratic behavior was found in the railroad industry. Between 1946 and 1947 the ratio of external funds to total investment fell from over 0.8 to 0.25. The following year the ratio rose again, though only to slightly over 0.3.

The behavior in the recession year of 1949 was hardly more uniform than in the earlier years. External financing by corporate industry as a whole fell rather sharply as external funds dropped from $3.7 billion to —$0.5 billion. The bulk of this change was the consequence of the behavior of the manufacturing and mining industry, which in 1949 *supplied* $3.7 billion of funds. The decline in corporate external funds was reinforced by the decline in the communications industry. The external funds of other industries either rose or, as in the case of the trade-service industry, remained unchanged.

The behavior of the external funds series in the recession is easily explained. In the utilities group, variations in inside funds are relatively small. The need for external funds is thus determined by the investment, and, more particularly, the fixed investment of the utilities. It will be recalled that both the railroads and the gas and electric companies behaved countercyclically in 1949, as their fixed investment actually increased. It was necessary, therefore, for them to resort to a larger volume of external financing than in 1948. The com-

munications industry, on the other hand, experienced a fairly sharp decline in fixed investment, and its need for external funds was consequently diminished. In 1949 the negative changes in manufacturing and mining as well as in trade-service inventories reinforced the declines in fixed investment, thus resulting in sharper declines in total investment than occurred in inside funds. In both cases external funds were negative, —$3.7 and —$0.3 in manufacturing and mining and trade-service, respectively.

The Korean War period.—In spite of the fact that this was a period of rather general rapid growth in fixed investment, the fluctuations in external funds were dominated by two factors. On the one hand, there was the erratic behavior of inventories; on the other hand, inside funds reflected the change in the tax structure. 1950 was a year characterized by an unusually high absolute level of profits. Profits before tax rose by over $7.0 billion, the second largest increase in the decade. Primarily because of this, inside funds rose to almost the highest level of the decade. This more than made up for the small rise in fixed investment and the very sharp increase in changes in inventories. The net effect was a continued decline in external funds. External funds of all corporations fell to a decadal low of almost —$3.0 billion. As usual, these movements were largely dominated by the manufacturing and mining groups. The effect would have been even more marked if the experience of the latter group had been universally shared. But, as a matter of fact, this was not quite the case. Even though the net profits before tax of utilities did rise and, along with them, inside funds, the latter were relatively so unimportant that external funds remained relatively unaffected. Only the gas and electric industry increased investment in 1950. In each of the utility industries, external funds declined somewhat, and only in the railroad industry did they actually become negative. In the trade-service industry the sharp increase in changes in inventories was sufficient to more than offset the rise in inside funds. Since, in addition, fixed investment also increased by more than 25 per cent, external funds rose over $1 billion. This was the only industry in which the flow of external funds did rise.

In 1951 the very sharp increase in manufacturing and mining inventory changes almost completely dominated the investment picture. With the exception of the trade-service group, the tempo of investment increased among all industries. However, the sharp rise in federal income tax payments more than offset the buoyancy of profits, and inside funds remained substantially unchanged in every

industry. Actually, the declines more than offset the rises, so that all corporate inside funds fell somewhat. Under the circumstances, it is not surprising that, with the exception of trade-service, the external funds of all industries rose.

In the following year, 1952, profits were not sustained, and tax payments continued to grow rapidly. On the other hand, the inventory investment of manufacturing and mining was not sustained. These two effects tended to cancel each other, and external funds remained relatively unchanged. Only railroads and the trade-service industries experienced actual declines in external funds. Both these industries, it should be recalled, decreased their fixed investment.

By 1953 the acceleration effect of tax payments was largely spent, and inside funds rose with net profits. On the other hand, only the railroad industry reduced its fixed investment, and only the manufacturing and mining industry reduced its total investment. In the total picture the rise in investment was rather sluggish, and the rise in inside funds was sharper. External funds consequently fell. Once again, however, the totals are dominated by manufacturing and mining. While the external funds of the communications industry remained relatively unchanged, those of the other three industries rose, particularly those of trade-service.

Recession and recovery, 1954 and 1955.—In general, the last two years of the decade were ones of declining need for external funds. Investment in inventory and in fixed plant rose in 1954 only in the trade-service group. While inside funds also increased, the use of additional external funds by the trade-service group proved necessary. It was the only industry in which external funds rose. In all the other industries investment fell, and in all but gas and electric inside funds either fell or remained unchanged. The declines in inside funds, where such declines occurred, were not so sharp as the declines in investment, so that the need for external funds also fell. In the gas and electric industry, where inside funds rose, there was a sharper decline in the need for external funds. Not only were the external funds of trade-service out of phase with the other industrial subgroups, but the magnitude of the difference was sufficient to outweigh the declines in all the other industries put together, with the consequence that all corporate external funds rose.

In the following year every industry, without exception, increased both total investment and inside funds. The increases in inside funds were greater than the increases in investment, and the external funds of every industry except the communications industry fell. The rise

in external funds in the communications industry was trivial, however.

Long-Term Borrowing

Long-term funds were generally a more important source of funds than short-term funds. There were individual years that constituted exceptions to this rule, but, by and large, the rule held in the postwar decade. This is not particularly surprising. Short-term funds are raised to overcome temporary financial difficulties, which may result from temporary accumulations of inventories, temporary accumulations of receivables, or temporary stringencies in the capital market which necessitate interim financing. The last is obviously transformed into long-term borrowing sooner or later. Temporary increases in inventories and receivables have a persistent tendency to become permanent in an expanding economy. As plant and equipment expand in response to the need for enlarged output, the level of inventories required also expands, and sooner or later the firm must face the fact that the increase in inventories is a part of that expansion. Also, accounts receivable increase as sales expand, and, with a lag, the increase is recognized as the result of an upward trend rather than an erratic increase. The debts incurred to finance them are then generally transformed into long-term form.

A second characteristic of long-term borrowing, at least for the corporate universe in the postwar decade, was that, in spite of its relative importance, it was a relatively more stable source of funds than either net short-term borrowing or decreases in liquid assets. The movements of external funds rarely reflected changes in long-term borrowing. These changes were almost always drowned by the movement of the other two components. By far the most erratic source was decreases in liquid assets.

These characteristics of the corporate universe do not hold without exception for the industrial components. Net long-term borrowing clearly dominated the external funds of the communications and gas and electric industries, and the influence of changes of long-term borrowing on fluctuations in external funds was radically reduced.

Borrowing by the various industries rarely expanded and contracted in unison. Except for the recession years of 1949 and 1954, at least one industry was out of step with the others in every year of the decade. The amplitude of the fluctuations of all corporate long-term borrowing was consequently somewhat diminished. The most significant changes in long-term borrowing occurred in the manufacturing and mining industry. Except for 1946 and 1947, manufactur-

ing and mining long-term borrowing and all-corporate long-term borrowing moved together.

Except for the fact that all-corporate long-term borrowing reached a peak in 1952 rather than in 1953, borrowing pretty well followed the pattern of fixed investment, rising from 1946 to 1948, falling in 1949, rising in the next few years, reaching another trough in 1954, and rising again in 1955. The same consistency, however, did not occur in the component industries. The first peak in long-term borrowing of manufacturing and mining occurred only in 1952. Similarly, a trough in long-term borrowing occurred in 1949, whereas the trough year for fixed investment was in 1950. In trade-service the first peak and trough occurred in 1948 and 1949, respectively, but fixed investment reached a peak in 1947. Thereafter, net long-term borrowing and fixed investment moved up and down together until 1954, when borrowing fell for a year, while fixed investment continued to climb throughout 1955. Whereas fixed investment of the gas and electric industry fell only in 1954 and leveled off in 1955, borrowing leveled off in 1949 and fell in 1950 as well as in 1954 and 1955. Long-term borrowing and fixed investment by the communications industry moved more closely together than even the all-corporate group. The only difference in the movements occurred in 1947 when communications' net long-term borrowing declined while its fixed investment continued to rise. Finally, the railroad industry generally increased its borrowing when fixed investment rose and decreased it when fixed investment fell. The only break in this relationship occurred in 1952 when railroad fixed investment fell, whereas net long-term borrowing did not decrease until the following year.

One of the noteworthy aspects of net long-term borrowing in this decade is that, simultaneously during most of the years, cash and portfolio securities were increasing. The trade-service industry, for example, never once decreased its accumulations of cash and securities, and manufacturing and mining resorted to this source of funds only in 1946 and 1954. The communications industry used this source of funds only a little more frequently and over the decade as a whole had significant net increases in cash and securities. The gas and electric and railroad industries were less fortunate and reduced their cash and securities more often than not.

By far the most important financial instrument employed during the decade was the corporate bond. In the manufacturing and mining, railroad, and gas and electric industries, as well as in the all-corporate group, net bond issues exceeded issues of both net stocks and mort-

gages. In many years bond issues by these industries exceeded the issues of stocks and mortgages combined. The communications industry, on the other hand, relied upon stock issues as a source of funds more than it did on bonds after 1948. In a few years, funds raised through stock issues by this industry were several times greater than funds raised through bond issues. In trade-service, while bond issues were more important than stock issues, mortgage funds were the most important source of long-term external financing.

Net bond issues reached a trough in 1950 rather than in 1949 and a mid-decade peak in 1952 rather than in 1953. The bond-issue behavior of no component industry followed quite this pattern. Bond issues of the communications industry reached the first peak of the decade in 1947 rather than in 1948. Trade-service bond issues, on the other hand, did not reach a peak until 1949. No industry reached a trough in 1949. Many hit bottom in 1950, but neither the railroad nor the trade-service industries did so until 1951. The all-corporate peak of 1952 is due primarily to manufacturing and mining, which issued $2.7 billion of bonds in that year, more than they did in any other year of the decade. The railroad industry was the only other industry that reached a peak in that year. The sharp acceleration of bond issues by trade-service and the lesser increase in issues by the communications industry prevented total bond issues from falling more sharply from the 1952 peak than it actually did. The fall in 1953 was only $0.2 billion in comparison with $1.0 billion in 1954. The sharp fall in 1954 was again primarily the consequence of the transactions of the trade-service and communications industries. Bond issues of both these industries fell rather sharply and more than offset the rise in bond issues by manufacturing and mining and gas and electric. Railroad bond issues declined trivially in 1954 and rose slightly in 1955. For the third successive year the trade-service and communications industries dominated the bond-issue field. Their issues rose by about the same amount that they had fallen in the previous year, $0.9 and $0.6 billion, respectively. While the issues of gas and electric and manufacturing both fell, the fall was not enough to bring the all-corporate total down. Issues of the latter rose to $4.2 billion in 1955.

Security Holdings

In the postwar decade the markets for corporate securities experienced the impact of extensive changes in the structure of funds sup-

plied by various investor groups. In quantitative terms at least, the corporate bond market underwent the most thoroughgoing transformation. Differential tax treatment caused a basic division of investors between the markets for corporate bonds and most United States government securities, which are fully taxable, and the market for the obligations of state and local government bonds, which are exempt from income taxation. This split was a primary feature of the capital market in the postwar decade, and it had important consequences for the supply of funds.

Institutions and institutional investors whose income is taxed at low marginal and average rates or is fully exempted from income taxation sought the superior yields of corporate bonds and hence dominated the supply of funds to this market. Life insurance companies, savings banks, non-insured corporate pension funds, and state and local governments became preponderant holders of the corporate bonds outstanding and accounted for a large fraction of the annual net flow of funds to this market, as shown in net acquisitions of bonds. Individuals subject to high and progressive income tax rates and commercial banks and fire and casualty insurance companies, subject with minor qualifications to corporate income tax rates, channeled their investable funds to state and local government securities, whose after-tax yields were generally superior for them to those on taxable corporates.

Individuals not only were extinguished as suppliers of new funds in the corporate bond market but, on balance for the decade, *drew funds from this market* by reducing the absolute volume of their holdings. Commercial banks did not affect a net liquidation of their corporate bonds holdings, but the increase in the absolute size of their holdings was very slight. As a consequence, the banks' holdings declined sharply as a proportion of the rapidly growing total of corporate bonds outstanding. Except on sporadic occasions, fire and casualty insurance companies acquired negligible amounts of corporate bonds.

Dominance of institutions in the corporate bond market was associated, too, with the growing proportion of personal saving channeled through financial intermediaries. If consumer durables are excluded from saving calculations, the share of saving through financial intermediaries rose significantly in the decade from 1939 to 1949.[9] Since the transformation in saving is founded in part upon contractual or

9. See Raymond W. Goldsmith, *Financial Intermediaries in the American Economy since 1900* (Princeton, N.J.: Princeton University Press, 1958), pp. 306–7.

semicontractual factors, it is reasonable to presume that its impact was felt throughout the postwar decade.

Neither the tax division of the bond markets nor the swing of personal saving was uniquely associated with the postwar decade. So far as the corporate bond market is concerned, however, the processes set up by these factors were strengthened in this period as hegemony of the institutional investor became virtually complete.

Since institutional investors, particularly life insurance companies and mutual savings banks, invest the bulk of their funds in two rival debt markets—mortgages and corporate bonds—demand in each must compete with the other for the limited financial resources of these major suppliers. The timing of alternating emphases between these markets on the part of these institutions is associated closely with aggregate demand in each. Consequently, yield relationships in these markets were closely related through the decade to competing demands and the switching of investable funds by suppliers operating in both markets; however, there were discernible lags in this switching in response to yield differentials.

The ability of institutional investors to move rapidly between markets to capitalize upon yield differentials was facilitated to a large degree by their possession of distended portfolios of United States government securities at the end of World War II. This ready source of liquidity, which could be drawn down on short notice, made it possible on many occasions for them to supply more funds than the current net inflow of funds would afford alone. This use of government holdings was facilitated by the Federal Reserve bond-support program until March, 1951.

While the market for corporate bonds was increasingly dominated by institutional investors, the market for common stock was marked by the persistence of the individual as the major holder. Recurring fear of inflation, widespread belief in secular economic growth, and preferential tax treatment of capital gains supplied powerful motivations for wealthy individuals to continue investing in and holding common stock. Even in this market, however, the impact of institutions was evident in the rising share of non-individual buyers in the annual net acquisitions of common stock in the second half of the decade. At the outset of the period individuals held in excess of three-fourths of all common stock outstanding. This proportion declined almost imperceptibly over the decade.

In terms of net purchases, individuals were completely dominant

for the first five years of the decade. In the period after 1950, however, the share of individuals in net purchases declined. This was not the result of a decline in the absolute volume of individuals' purchases but rather through the more rapid growth of annual acquisitions by non-insured corporate pension funds and, to a lesser extent, investment companies. For example, during the period 1951–55 non-insured pension funds averaged 15 per cent of total net purchases for the year as compared with under 5 per cent for the first half of the decade. Fire and casualty insurance companies continued to be consistent net purchasers over the entire ten years, but their proportion was erratic from year to year, and the relative share of total stock outstanding held by these companies changed very little over the period. Investment companies supplied funds to this market in a rather steady fashion, and over the decade their holdings increased modestly relative to the total of common stock outstanding.

Though legal changes appear to have played only a small role in producing any expansion in institutional purchases of equities, it is worth noting them as an indication of changing attitudes toward common-stock acquisitions in certain sectors of the financial community. In the early 1950's a number of laws were passed which afforded greater latitude for institutional holdings of equities. New York law, which governs perhaps 80 per cent of the life insurance industry's investments, was liberalized twice to allow life insurance companies to hold more common stock. Fiduciary law governing the investment of discretionary pension trusts was liberalized in New York to incorporate a modified prudent man rule allowing trustees to invest up to 35 per cent of assets in common stock. Mutual saving bank statutes were amended to allow them to hold up to 5 per cent of assets in equities. Though it is only in the case of pension funds that these legal changes seem to have had a material impact, they are notable as an indication that the fears surrounding investment in common stock produced by the 1930's were being diminished.

In dollar volume the market for preferred stocks was substantially less significant than the markets either for bonds or for common stocks during this time. The volume of preferred stock outstanding rose somewhat less than $4 billion over the decade. The proportion of preferred outstanding held by individuals declined gradually over this period. The share of preferred stock outstanding accounted for by financial institutions rose from 12 per cent at the end of 1945 to nearly 23 per cent at the end of 1955. Life insurance

companies, non-insured pension funds, and investment companies accounted for the bulk of this increase.

In yearly acquisitions quantitative dominance swung sharply between individuals and financial institutions. Acquisitions by individuals constituted the bulk of total acquisitons in some years, but in others individuals tended to fall nearly to zero as a percentage of net acquisitions, or, indeed, on several occasions to liquidate holdings. When acquisitions by individuals diminished, net purchases by institutions increased sharply in absolute volume and relative share.

DISCUSSION

J. ARNOLD PINES:* The subject of the paper prepared by Messrs. Winn and Hess is a most important one and a very timely one. For that matter, I suspect that the subject will continue to compete for attention for quite a long time with the other important issues facing bond investors, the issuing companies, regulatory bodies, and the general public. It is a problem in which past discussion has often been charged with strong feelings and emotions. Perhaps today's discussion will serve to promote a better understanding of the problem of callability without adding to the heat factor.

The Winn-Hess paper contains a number of points or conclusions. Because of limitations of time, I shall discuss only those which I consider to be the more important ones.

Point No. 1.—The authors state that, in general, privately placed corporate bond issues have greater restrictions on the call privilege than publicly offered issues, perhaps because of the stronger bargaining position of the institutional investor in the private transactions. They state further that privately placed issues also carry higher interest rates, generally, than publicly offered issues.

Comment on Point No. 1.—It must be obvious to all that privately placed issues will ordinarily contain more stringent call restrictions and higher interest rates than publicly offered issues. Insofar as public utility companies are concerned, the practice of going to public competitive bidding on bond issues is strongly intrenched as the result of the Securities and Exchange Commission's competitive bidding Rule 50 which was promulgated in 1941 under the Public Utility Holding Company Act of 1935. Accordingly, the fact that the issuer does not sell its bonds at competitive bidding but, rather, seeks to raise the money through a private placement bespeaks, generally, a weaker bargaining position on the part of the issuer as against the institutional investor.

This relative inferiority in bargaining position exists not only in situations where the particular bond issue may lack the conventional investment appeal or vendibility of a competitive bidding issue but also where the bond issue is being sold by a fairly strong issuer. In

* Securities and Exchange Commission.

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the latter case the issuer, by selling its bonds privately, has stripped itself of a good deal of its bargaining power on the call provision and leaves itself in a weakened position in the determination of the interest rate. This latter type of situation clearly points up the efficacy and wisdom of the Securities and Exchange Commission's competitive bidding rule.

Point No. 2.—Messrs. Winn and Hess state that data accumulated on corporate bond issues offered between 1945 and 1958 indicate that there is very little evidence that the value of the call privilege is reflected to any significant extent in the yields on the bonds; i.e., the presence or absence of the call privilege appears to have no significant effect on the interest rate.

Comment on Point No. 2.—I believe this conclusion of Messrs. Winn and Hess to be entirely valid. I assume that the conclusion was reached from the study being conducted at the Wharton School of Finance and Commerce. This conclusion, I should like to emphasize, is tremendously important. It should lay to rest the erroneous assumption which apparently has gained currency among certain issuers and underwriters, and even among certain regulatory agencies, that, all other things being equal, a bond which is non-refundable for, say, five years will carry a measurably lower interest rate than a freely refundable bond. The conclusion reached by Messrs. Winn and Hess will probably startle quite a few people. Because of the transcendent importance of this point, I am quite disappointed that the Winn-Hess paper does not contain details concerning the absence of any significant degree of correlation between interest rate and call provision.

In this connection, I am amused when I recollect that a little over a year ago an official of a very large underwriting house said to me and certain of my associates that the freely callable bonds issued under the Holding Company Act are costing the issuers about 35 basis points more in interest costs than bonds issued outside the Holding Company Act carrying a five-year restriction on refunding. I questioned this individual as to the basis for this statement, and he replied that he really could not prove his point, since he had not made any study of the question. It soon became clear that he was simply echoing what he had heard some other people in the financial community say. It is this kind of statement, made without the benefit of any objective study, that is mischievous and can cause a great deal of confusion in the minds of the managements of the corporate issuers and others concerned with the problem.

Point No. 3.—Messrs. Winn and Hess state that several federal and state regulatory agencies have followed a firm policy of requiring immediate callability or a short deferment period, in conjunction with a low premium, in bond issues subject to their regulatory jurisdictions. They further state that these agencies have asserted that such provisions do not raise interest costs and that these agencies have implied that if a utility company could prove the opposite, the agencies would modify their policy.

Comment on Point No. 3.—On the basis of my own studies of interest costs of refundable versus five-year non-refundable electric and gas utility bonds offered at competitive bidding during approximately the last 18 months, it is my view that the presence or absence of a restriction or freeze on refundability does not necessarily carry with it any advantage to the issuer insofar as the cost of money is concerned. In any event, the difference between the average cost of money on refundable versus non-refundable issues is so slight as to indicate that a relatively small drop in interest rates during the period of the call freeze, after making due allowance for the redemption premium, would be prejudicial to the company issuing the non-refundable bond. Accordingly, the issuer of the non-refundable bond and ultimately the electric and gas utility consumers could suffer real detriment from loss of opportunity to refund.

Since the Winn-Hess paper refers to the policy of federal agencies on callability, I should like to use this opportunity to discuss the Securities and Exchange Commission's policy thereon. The Securities and Exchange Commission has no jurisdiction to pass upon indenture provisions of industrial corporations or of utility companies which are not subject to the Public Utility Holding Company Act of 1935. With respect to utility companies subject to the Holding Company Act—and I might point out, in this connection, that at the present time the jurisdiction of the act extends, in terms of assets, to a little over one-fifth of the privately owned electric and gas utility industries combined—Section 1(b) of the act declares that the national public interest and the interest of consumers of electricity or gas are or may be adversely affected by lack of economies in the raising of capital. Other provisions of the Holding Company Act provide the commission with the necessary means of implementing this congressional policy. Thus, while the Holding Company Act itself does not give the Securities and Exchange Commission jurisdiction over utility rates charged to consumers, the act does direct the commission to protect the consuming public against being re-

quired to support unreasonable interest costs. It is the commission's position that free callability upon the payment of reasonable redemption premiums is necessary to secure this result.

To effectuate this congressional policy, the commission explicitly set forth its position on redemption restrictions in two cases in 1953. In one of them, *Indiana & Michigan Eelectric Company* (35 S.E.C. 321, 326), the commission stated:

> It is our opinion, however, that non-redeemable features in senior securities, even though the period of non-redeemability is as short as three years, should not be resorted to as a means of reducing the cost of money, and we shall in the future insist that all reasonable efforts be made to keep this undesirable feature out of financing programs.

The other case to which I referred was *Arkansas Louisiana Gas Company* (35 S.E.C. 313).

You will note from the foregoing quotation in the *Indiana & Michigan* case that one of the things the Securities and Exchange Commission was emphasizing is that, to put it colloquially, there should be no trading off of the right to call for a consideration in the interest rate, or, to state it otherwise, the commission will not sanction shaving the interest rate in exchange for accepting a restriction on the right to refund. I take this to mean that the issuer should have complete freedom to refund and that it should pay the going rate of interest consistent with its credit position. This point needs emphasis in view of the statement by Messrs. Winn and Hess that the agencies whose policy on callability was referred to previously have implied that if a company could prove that free callability to refund is reflected in an increased interest rate on the bonds, the agency or agencies in question would modify their policy against call restrictions. So far as I am aware, no spokesman for the Securities and Exchange Commission has ever implied this, and, indeed, any such implication would appear to be contrary to the import of the *Indiana & Michigan* decision.

Even if it could be shown by objective data that the issuer could secure a lower interest rate by agreeing to accept a restriction on the right to refund, that merely marks the beginning of the consideration of the problem, for who is so prescient that he can foretell, at the time of the issuance of a non-refundable bond, that the issuer will save money over the life of the issue? With all due respect to the suggestions of Messrs. Winn and Hess, that reference can be had to historical trends of interest rates in order to estimate the statistical probabilities of a reduction in interest rates during a future five- or

ten- or thirty-year period, neither the issuer nor the regulatory agency concerned should gamble on the likelihood and timing of such future possibilities.

The Securities and Exchange Commission's position on callability was officially adopted in a Statement of Policy issued as Holding Company Act Release No. 13105, dated February 16, 1956. One of the provisions included in that document is that bonds issued by public utility companies under the Holding Company Act shall be redeemable at any time upon reasonable notice upon the payment of a reasonable redemption premium, if any. While the Statement of Policy contains no formula as what constitutes a reasonable redemption premium, the commission's working policy has been that the initial redemption price should not exceed the sum of the initial public offering price plus the interest rate. For example, if the bonds are offered to the public at 102 and bear a 5 per cent coupon, the initial redemption price may not exceed 107, and the 7-point premium must thereafter be reduced pro rata to maturity. The commission has adhered to this policy—which, it is worth noting, actually has a certain amount of built-in flexibility in it by reason of changes in interest rates—and it may reasonably be assumed that the commission will continue to adhere to it unless it is presented with a special or unusual situation which makes its application in the particular circumstances an unreasonable hardship.

It is my understanding that the Federal Power Commission also has a policy of free callability on electric utility bonds issued under its jurisdiction, although I am not certain that it adheres to the same rule-of-thumb formula which the the Securities and Exchange Commission employs. It is also interesting to note that as recently as July 31, 1958, the Interstate Commerce Commission stated, in an order involving the Southern Railway Company, that it would not look with favor upon the inclusion of provisions in bonds which restrict the issuer's right to redeem them at any time upon the payment of a reasonable premium. It added that its policy in the future, in the absence of clear justification for contrary action, would be to refuse approval of the issuance of bonds which are not freely redeemable at any time.

You might be interested in certain data from a study which I have made of all electric, gas, and telephone utility bond and debenture issues offered publicly during the years from January 1, 1953, to May 15, 1958, the proceeds of which were used in whole or in part to refund outstanding bond issues. The study covered 49 offerings.

Nearly all the bond issues refunded had been outstanding for less than five years. The total principal amount of the issues refunded aggregated in excess of $871,000,000. A large number of the 49 new issues was sold in 1954 and 1955, at a time when interest rates were at a fairly reasonable level. From August 18, 1955, when money costs began to rise, until April 14, 1958, by which time money costs had already clearly declined, there were no refundings, except for one special situation. The average interest savings per year, before deducting expenses, resulting from these refundings amounted to one-half of 1 per cent, or an aggregate of $4,357,000. This, I am sure you will agree, is a very measurable saving in interest costs and should have a beneficial effect on the total annual cost of utility services to the American public.

Point No. 4.—Messrs. Winn and Hess state that, although free callability may have been a factor in driving some large institutional investors out of the market for utility bonds, it has not prevented utility companies from selling new issues.

Comment on Point No. 4.—First, I should like to observe that, while some of the large life insurance companies have not purchased freely callable public utility bonds in recent years, a substantial number of the smaller life insurance companies have purchased them. The large life insurance companies, I believe, are not very greatly interested even in bonds carrying a five-year restriction on refunding. Perhaps they prefer a much longer freeze period. In this connection, I might point out that every electric or gas utility bond offered at competitive bidding during the last 18 months which carried a freeze on refunding limited the freeze to a five-year period.

Second, I should like to address myself to the very important point as to whether or not issuers of refundable utility bonds have been able to sell their issues. The answer, you will shortly see, is a vigorous yes! I say this point is very important, because the Securities and Exchange Commission would not want to have a policy which could result in drying up available sources and supply of capital to such dynamic industries as the electric and gas utility industries. Any impediments to the free flow of capital to a public utility company would be a matter of serious concern to the commission.

In connection with a review which the commission directed be made of its policy on free callability, I studied all the electric and gas utility bond issues offered at competitive bidding between May 14, 1957, and November 30, 1958, covering some 18½ months. The date of May 14, 1957, was selected because on that day the New

York State Electric and Gas Corporation, a public utility company not subject to the Holding Company Act, instituted a practice which has been followed by a number of other public utility companies, none of which is subject to the Holding Company Act, of accepting a five-year restriction on refunding. In this study I compared the number of bids received from underwriters on the refundable versus the five-year non-refundable issues and also the degree of marketing success which the winning bidder had in disposing of the bond issue.

A comparison of the number of bids received is relevant because underwriters, who are in business to make a profit, will not be interested in bidding for refundable bonds unless they believe the bonds can be marketed at a profit. Similarly, a comparison of the success or failure of the winning bidder to sell the bonds to the ultimate purchasers will have a profound bearing on whether or not underwriters will continue to compete for refundable issues.

For the period May 14, 1957, to November 30, 1958, there was a total of 137 electric and gas utility bond issues (including debentures) offered at competitive bidding, aggregating $2,956,000,000. These included companies subject to the Holding Company Act as well as those not subject to the act. The refundable issues numbered 109 and accounted for a total of $2,005,000,000, while the non-refundable issues—each one non-refundable for a period of five years—numbered 28 and totaled $951,000,000 principal amount. The number of refundable issues thus represented approximately 80 per cent of the total number of issues, while in terms of principal amount the refundable issues accounted for approximately 68 per cent.

It must be recognized, of course, that the number of bids is affected by such factors as the quality of the issue; its size; its timing in terms of such considerations as the current market conditions, the number of issues expected to appear in the near future, the current inventory of the underwriters, and the appeal which a particular issue has to investors; and many other factors. Notwithstanding these variables, it seems reasonable to assume that their presence or absence will tend to cancel out if there is a sufficient sample. While one may contend that the sample is not large enough because it included only 28 non-refundables as against 109 refundables, it must be remembered that the sample comprised the entire universe of electric and gas issues sold at competitive bidding, and it would therefore seem incumbent on one who favors a call restriction to present proof of its necessity.

The bidding data for the issues included in my study are presented in Table 1.

The weighted average number of bids received on the refundables was 4.46, while on the non-refundables it was 4.11. The median number of bids on both groups was the same, i.e., 4.

As to the relative degrees of marketing success of refundables versus non-refundables, we must first define our terms. I have assumed that a successful marketing by an underwriting syndicate is one in which, at the termination of the syndicate, at least 95 per cent of the bond issue has been sold at the syndicate price or, conversely, that not more than 5 per cent of the issue remains unsold. Of the 109 refundable issues, 75.2 per cent were successful according to this definition. Of the 28 non-refundable issues 75.0 per cent were successful.

TABLE 1

Bids	Number of Bond Issues	
	Refundables	Non-refundables
One	2	..
Two	7	2
Three	21	10
Four	28	5
Five	22	8
Six	20	1
Seven	7	1
Eight	2	1
Total	109	28

In terms of principal amount, 72.3 per cent of the refundable issues were successful, while 73.9 per cent of the non-refundable issues were successful. Extending the comparison to the aggregate principal amounts which were sold at the applicable syndicate prices up to the termination of the respective syndicates, we find that 90.0 per cent of all the refundables and 89.5 per cent of all the non-refundables were so sold.

In view of the virtually equal results of number of bids and of marketing success which the two groups showed, I believe we must conclude that the presence or absence of a freeze on refundability has no especial significance, let alone a controlling influence, on the ability of a public utility company to raise bond money.

Point No. 5.—Messrs. Winn and Hess state that institutional investors criticize the policies of certain regulatory agencies on callability on the ground that they favor the utility consumer at the expense of the investor, thus providing a "one-way street" of protection for the former as against the latter.

Comment on Point No. 5.—I vigorously disagree with this contention. I referred earlier to the fact that the Statement of Policy promulgated by the Securities and Exchange Commission includes a provision requiring free callability. But it includes more. It contains a whole galaxy of protective provisions which the commission requires to be included in first-mortgage bond indentures of public utility companies. These provisions, which are of very material benefit to the bondholder and which are designed to make the bond a sound security, relate to such matters as the issuance of additional bonds, sinking and improvement fund, renewal and replacement fund, limitation on common-stock dividends, limitation on prior lien obligations, and various others matters.

When the Securities and Exchange Commission had under consideration the adoption of a Statement of Policy, it received very strong objections from the issuing companies, who complained, among other things, that these protective provisions would injure the issuing companies and their common stockholders and would be unduly beneficial to the bondholders, who could look after themselves. They argued, in effect, that the bondholders were receiving a "one-way street" of protection at the expense of the issuer. Notwithstanding these and other objections, the commission adopted the Statement of Policy.

It must always be borne in mind that the Holding Company Act is a regulatory statute which Congress deemed necessary to protect the national public interest and the interests of investors and consumers in respect of public utility holding companies and their public utility subsidiaries which have a monopoly within a given area or region. The Securities and Exchange Commission has sought to do justice to all those whose interests are affected by this statute and to reconcile, so far as practicable, their competing views.

Point No. 6.—The Winn-Hess paper states that the only way the bondholder can protect himself against loss from a refunding call, other than to prohibit the call outright or to impose an extremely high call premium, is to require the issuer to pay over to the bondholder all the interest savings resulting from the refunding for the remaining life of the refunded issue, together with an amount equal to the expense incurred by the bondholder in reinvesting the proceeds of the redemption.

Comment on Point No. 6.—A provision in the indenture such as that suggested by Messrs. Winn and Hess would be tantamount to an absolute non-call provision for the remaining life of the bond issue

insofar as a refunding is concerned. Obviously, no issuer would undertake a refunding if the only result would be to pay over the fruits of the refunding to the bondholder, plus an amount assumed to represent the bondholder's reinvestment expenses to boot. The reasons which I have set forth above, which justify the position of the Securities and Exchange Commission in not permitting a non-call provision for up to five years, would a fortiori compel the commission, in my opinion, to reject a provision the effect of which would be to make the bonds non-refundable for their entire life.

I should like to make one further point on the commission's formula regarding the initial call price. While the initial call price adds one year's interest requirement to the initial public offering price, this increment will actually extend the bondholder's interest income at the equivalent of his old contractual rate for several years beyond the call date. Assume, for example, that just about 1 year after issuing a 25-year 5 per cent bond at par, the issuer calls the issue at the call price of 105 and refunds it with a new 3½ per cent issue. The present worth of the interest savings of 1½ points for the remaining 24 years of life of the bond, discounted at the rate of 3½ per cent per annum compounded semiannually, amounts to $24.22 per $100 principal amount. The call premium of 5 points thus gives the bondholder 20.6 per cent of the present worth of the interest savings. To state it another way, the call premium, if invested by the bondholder at a rate of 3½ per cent per annum in the new bond or in an equal-risk security, will extend the bondholder's interest income of 5 per cent per annum for a little over 3½ additional years beyond the call date. Thus, under the Securities and Exchange Commission's policy, the bondholder actually shares in a substantial portion of the refunding savings.

MARVIN CHANDLER:* First, let me say that I consider these to be most interesting papers. They represent a real contribution to the thinking on this subject. Messrs. Winn, Hess, and Pines have gotten us down to the basic principles and theories which underlie the problem. And it is a very real problem to borrowers like my company, which will need something like $100,000,000 of senior capital over the next five years.

I have started with this preamble because I assume that my function as a discussant is to be as questioning and critical as possible, and from here on I intend to be.

* Northern Illinois Gas Company.

To start at the end, instead of the beginning, as a borrower it is hard for me to envision Northern Illinois Gas offering a new bond issue which compensated the holder from redemption date to maturity date with a supplementary interest payment in the event of refinancing, in order to keep him whole. Basically that is because I am sure it would cost us more than preserving the refinancing right by providing whatever call premium is required, even though the interest rate we would have to pay would then be higher. Although the lenders logically should and I believe have required a moderately higher interest rate if the borrower has preserved refinancing flexibility, it does not appear to me to have been sufficiently higher to have warranted saving by some form of non-callability, non-refundability, or refunding compensation provision. In other words, I agree in general with Mr. Pines on a policy of payment of going rate and preserving the right to refund.

That leads me to say that I believe there has been more evaluation, or at least careful judgment of the value, of the call privilege than the authors have perceived. When there are two electric utility offerings with the same bond rating in the same week—one with standard redemption features and one with a deferred callability provision—both underwriters and ultimate buyers are forced to place a value in the form of an interest rate differential on the variation.

Actually, any utility borrower, I believe, could obtain a precise measurement of the differential by offering a bond issue at competitive bidding with a proviso for alternate bids—one with standard call provisions and one with call protection for the lender. Then, if the underwriter would bid both ways, he would see the differential and decide which was the better for him. Personally, I believe that bids both ways would be made, although the underwriters won't admit it. So far, no one has been bold enough to do this, but it would be a most interesting experiment. It would still leave the difficult problem of choosing between the two bids.

I don't believe that the arithmetical evaluation suggested by the authors is practical—that is, the estimate of the length of time which probably will ensue before a drop of x per cent in interest rates occurs, coupled with a projection of supply and demand for funds to form the basis for an interest-rate projection. Even this so-called objective study would to my mind be full of conjecture, and I would have limited confidence in it. A factor which they did not mention but which could alter the desirability of a refunding in the future would be a change in federal income tax rates or provisions. A differ-

ential of half a point between coupon rate and going rate might not justify a refunding at a 52 per cent federal income tax rate but would look more attractive at a 40 per cent tax rate.

Finally, I think the factor of psychological security is very important. Personally, as an issuer, I think we could look pretty silly to our stockholders a few years later if we had given up the complete right to refund in exchange for a concession of, say, a fraction of 1 per cent in interest rate. The lender, on the other hand, it seems to me, is much less subject to criticism if he loses a high-yielding investment, at a profit over what he paid for it (the call premium), and has to reinvest less favorably because the whole general level of interest rates has fallen.

It seems to me that it is the borrower's function to set the terms which he thinks give him the flexibility in the future which he should have. It is then the lender's function to say that he will charge for funds so qualified. He does set a price, which the lender may or may not accept.

The authors have more fears than I foresee of disputes arising over the interpretation of non-refundability clauses. We should remember that the borrower wants to preserve his good name and credit standing with the lenders. In fact, these lenders will be the very investors in general to whom the borrower must turn for the new funds required to make the redemption. Hence I doubt very much whether borrowers will take a sharp interpretation of these clauses or seek a loophole in them. Of course, in a very rare case there could be an honest difference of opinion, but, I for one, as a recurring borrower, would certainly deem it unwise to try to utilize a regular redemption clause to accomplish a refunding by indirect means if it were prohibited by direct means.

To sum up my position, my preference runs in order as follows: (1) reasonable call premiums for all purposes, say, starting at coupon rate; (2) higher call premium for refunding, perhaps for a limited number of years; (3) non-callability for refunding purposes for five or so years; (4) Winn-Hess suggestion; (5) non-callability for a protracted period or to maturity.

CANONS OF INVESTMENT: A REAPPRAISAL

CHANGING INTEREST RATES AND THE INVESTMENT PORTFOLIO*

HARRY C. SAUVAIN
Indiana University

LAST SUMMER there was some unusual excitement in Wall Street and in the financial community. The cause of the disturbance was not the behavior of stock prices, as is usually the case, but rather the fluctuation of market prices in the ordinarily unexciting bond market. There were days last July when prices for some Treasury bonds fluctuated more than prices for some leading common stocks. In a period of three months, from mid-June to mid-September, 1958, prices for several long-term Treasury issues declined 9–11 points, and the price of the new Treasury bond offered on June 15, 1958, dropped 6 points. These were rather sensational developments in the market for the highest-grade securities in the country. Some speculators in government bonds realized heavy losses, and a lot of people who thought of government bonds as the safest and most conservative media for investment of money to be found anywhere in the world were deeply shocked.

One of the important implications of developments in the bond market during 1958 is that changes in the level of interest rates prevailing in the market may have serious consequences for bond investors and that there is a need for further study and more precise delineation of that hazard that has come to be known as "interest-rate risk."

GREATER IMPORTANCE OF INTEREST-RATE RISK RELATIVE TO FINANCIAL RISK

Two or three decades ago the main concern of the conservative investor, and sometimes his sole concern, was to obtain "safety of principal." I put that term in quotation marks because it had a particular meaning. It meant safety of principal as far as the ability to

* This paper by Harry C. Sauvain, the following paper by John C. Clendenin, and the discussions by Corliss D. Anderson, John F. Childs, and Douglas A. Hayes were presented at a meeting of the American Finance Association in Chicago on December 28, 1958. The program was under the chairmanship of Paul M. Van Arsdell, University of Illinois.

pay of bond issuers was concerned. It meant little risk that an issuer would fail to make payments of principal and interest in dollars, in full and precisely when due. It also meant little fluctuation in market prices for "safe" securities due to uncertainties about future payment of principal and interest.

Investors have known for a long time that market prices for the better grades of bonds are affected by changes in interest rates. Investments textbooks written in the 1920's sometimes refer to high-grade bonds as "money-rate" bonds and observe that their market prices fluctuate with changes in interest rates. But changes in prices for such securities due to interest-rate changes have not been considered very important even in some fairly recent writings. Graham and Dodd in their excellent book on security analysis, which has been virtually a bible for many of us, say that in the field of high-grade bonds the security analyst does not ordinarily concern himself with price fluctuations. "He knows from experience," they say, "that, while price fluctuations do occur, they are only rarely so wide as to affect the finances or confidence of those holding this type of security."[1]

I submit that in this era of the 1950's security analysts or investment managers *must* concern themselves with market-price fluctuations even in the field of high-grade bonds because *they are often* so wide as to affect the finances of investors. When government bonds drop 10 points in a few months and when high-grade corporate bonds lose one-fourth of their market value in the course of a few years because of change in interest rates, the finances of those holding such securities are likely to be very much affected. I suggest that investors in high-grade securities should be even more concerned with interest rate than with financial risk. There is, of course, the important problem of classifying securities as to grade; but when a bond qualifies as high-grade, it is protected by such large margins of earnings and assets that the usual fluctuations in the financial condition of issuers accompanying cyclical movements in business have little influence upon market price. On the other hand, the market prices of such securities and the yields at which they may be purchased from time to time are very much affected by cyclical changes in interest rates.

We have always had fluctuations in interest rates and corresponding changes in market prices and rates of yield on high-grade securities, but it seems to me that interest-rate risk has become more

1. Benjamin Graham and David L. Dodd, *Security Analysis* (3d ed.; New York: McGraw-Hill Book Co., Inc., 1951), p. 24.

important in recent years. For one thing, there has been a great increase in the amount of high-grade and medium-grade bonds in the hands of investors over the past decade or two. The amount of United States government marketable securities outstanding has grown from $42 billion at the end of 1941 to about $172 billion at the end of last October; the amount of corporate long-term debt has increased about two and one-half times since 1946 and currently stands at a figure somewhat in excess of $100 billion. There has been a similar expansion in the total amount of state and municipal obligations to a current figure of more than $50 billion. In addition, there are some foreign dollar bonds and some preferred stocks that qualify as high grade. The fact is that investors now hold somewhere in the neighborhood of $325 billions of securities mostly of the grade that fluctuates in market price with changes in interest rates.

A second development that makes interest-rate risk more important is an apparent increase in the amplitude of cyclical fluctuation in interest rates. I make this observation rather tentatively because it is difficult to measure a trend in the amplitude of such fluctuations over a long period of years and because the experience of the 1950's may not be indicative of basic change in the stability of long-term interest rates. But if you examine the record of yields on government securities over the last forty years as shown in the *Federal Reserve Chart Book* (Historical Supplement), you must be impressed by the relative steepness of the decline in rates for all maturities in the recession of 1953–54 and again in the recession of 1957–58. Similarly, the rise in rates between about the middle of 1954 and the middle of 1957 was very marked. The Treasury bill rate rose from a fraction of 1 per cent to more than $3\frac{1}{2}$ per cent in that period of about three years, and the average yield on long-term Treasury bonds rose from $2\frac{1}{2}$ to about $3\frac{3}{4}$ per cent. This is an increase of 50 per cent in the long-term rate. The magnitude of these fluctuations is particularly remarkable because the period of the 1950's has been one of relatively mild cyclical fluctuations. If we except certain periods of great financial crisis, such as 1920–21 and 1931–32, the amplitude of fluctuations in interest rates in the 1950's has been greater than in any similar period of time since World War I.

These developments of recent years support the idea that we need to examine more closely the manner in which changes in interest rates affect market prices and rates of yield for securities and to generalize more accurately the cause-and-effect relationships.

Grades of Securities Influenced Particularly by Interest Rates

We may very well begin the present effort to examine further the influence of interest-rate changes on security investments by consideration of the elementary generalization that prices of high-grade bonds fluctuate inversely with changes in interest rates. This principle is a product of the simple arithmetic of bond-yield computation. When interest rates rise so that bonds must be sold to provide a higher yield than formerly, the increase in yield is accomplished by a downward adjustment of market price. When interest rates in the market change in such a manner that a bond may be sold at a lower yield than formerly, market price is adjusted upward.

But is it sufficient to say that changes in interest rates are important only for high-grade securities? Most of us think of high-grade bonds as comprising governments and corporates and municipals in the first two rating categories. Experience of recent years indicates that this concept is not broad enough. If you compare the average yields on the highest-grade corporate bonds, those rated triple A, and average yields on medium-grade corporate bonds, those rated triple B, over the last ten years, you find that they have fluctuated in much the same pattern. I have worked out the correlation between Standard & Poor's average yields on triple A and triple B bonds, using end-of-month data, for the period from January, 1948, to September, 1958. The coefficient of correlation is 0.957 per cent; R^2 is 91.6 per cent. This is a surprisingly high correlation.

The differential in yield between the two series tends to vary both ways from about 75 yield basis points. In periods of economic improvement when investor confidence is high, the differential declines about 50 basis points. In periods of recession investors seem to have less confidence in triple B bonds, and the differential rises to somewhat more than 100 basis points. In the last ten years the greatest aberration from the pattern of correlation occurred during the sharp decline in business activity from August, 1957, to January, 1958. In these months the yield differential between triple A and triple B bonds increased from about 75 basis points to about 125 basis points. In spite of these variations, the relatively high degree of correlation between the two series over a period of a little more than ten years indicates that changes in interest rates are a major influence upon yields and prices for medium-grade bonds.

It is interesting to observe, too, the close correlation between yields

on triple A corporate bonds and yields on a group of high-grade preferred stocks. The coefficient of correlation for these two series as published by Standard & Poor for the period January, 1948, to September, 1958, was 0.931 per cent, and R^2 was 86.7 per cent. This, too, is a high coefficient of correlation, and it would be higher but for the long-term shrinkage in the size of the yield differential between triple A corporate bonds and the group of high-grade preferred stocks. Thus inclusion of high-grade preferred stocks and probably some that are not quite so high grade further enlarges the area of security investment in which interest rates appear to be the major influence upon price changes.

The increase in the importance of interest-rate risk relative to financial risk for these classes of fixed-income securities below the top grade is due not only to the greater amplitude of fluctuation in interest rates but also to the lesser amplitude of fluctuation in the business cycle. In the past decade business recessions have caused little impairment generally in the ability of corporate issuers to make payments of interest and preferred dividends and have not been so severe as to shake seriously the confidence of investors in their continued ability to do so. Many economists think that evolutionary changes in our economic system have brought about this stability and that it will continue in the future. Perhaps it is too soon to be sure about this, but I think that a recurrence of conditions such as those of the 1930's, which sent yields on medium-grade bonds soaring to 10 or 11 per cent, is very unlikely.

It is possible to go further with this kind of analysis and to show that prices for lower-grade bonds and preferred stocks and even for common stocks are affected in some degree by changes in the level of interest rates prevailing in the market. However, casual observation of the behavior of the market prices indicates that as the degree of financial risk in securities increases, considerations of financial risk become increasingly important as an influence upon price and that, in the general category of common stocks, changes in earnings and dividends and changes in investors' expectations concerning earnings and dividends far outweigh the effect of changes in interest rates as an influence upon market prices.

Therefore, I am satisfied to stop with the proposition that the area of security investment in which interest-rate changes are of major importance consists of those grades of securities down to and including the grade represented by the triple B rating. I think that this is a significant enlargement of the usual concept of the investment

area affected by interest-rate risk and that it has some important implications for investment policy.

Interest-Rate Risk and the Length of Maturity

Moving further into the relationship between market prices for money-rate securities and changes in interest rates, we come to the generalization that the amplitude of fluctuation in prices with changes in interest rates varies with the length of the period to maturity of securities. In other words, the greater the length of maturity, the greater is the fluctuation of price with a given change in interest rates. Developments in the bond markets recently suggest the need for more careful examination of variation in the amplitude of price fluctuations with differences in length of maturity.

The amplitude of price fluctuations for securities of different maturities with fluctuations in interest rates is governed by two variables. One is difference in the length of maturity of securities. The other is variation in the size of fluctuations in interest rates, or market rates of yield, for securities of different maturities. For the present discussion we assume that changes in interest rates are the sole influence upon market prices for money-rate type securities.

Length of maturity as the sole variable.—The second variable, difference in the size of fluctuation of rates for different maturities, can be held constant by assuming that change in rates of yield required by the market from one time to another is proportionately the same for all maturities. Then the effect of changes in interest rates upon market prices is solely a function of difference in length of maturities. In order to observe the effect of a change of interest rates of the same proportion for all maturities, I assumed that a number of securities with different maturities from one to fifty years, all bearing 3 per cent coupons, were all selling on a 3 per cent yield basis and thus were priced at par. Then I examined the effect upon market price of shifting all maturities to a $3\frac{1}{2}$ per cent yield basis. Thus the increase in rate of yield was $16\frac{2}{3}$ per cent for all maturities.

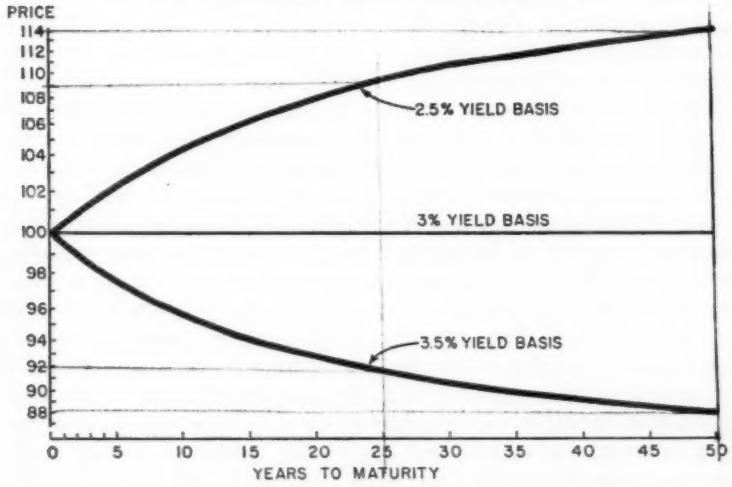
The effect of this change in interest rates upon prices is shown by the lower curve in Chart I, which is a line drawn through the market prices that would prevail for securities of the different maturities on a $3\frac{1}{2}$ per cent yield basis. The line forms a curve declining at a decreasing rate from the shorter to the longer maturities. Next I assumed that securities of all maturities in this group were selling on a $2\frac{1}{2}$ per cent yield basis and determined their market prices on this basis. The upper curve in Chart I is a line drawn through the mar-

ket prices that would prevail for all maturities after such a decline in interest rates. The line forms a curve rising at a decreasing rate from the shorter to the longer maturities.

The important idea that emerges from these observations is that the size of price changes with a uniform change in interest rates for all maturities does not increase in proportions varying directly with increase in length of maturity but that the size of price changes increases in proportions that decrease with each period of time added to length of maturity.

CHART I

THE CHANGE IN MARKET PRICES FOR SECURITIES OF DIFFERENT MATURITIES WITH A PROPORTIONATE CHANGE IN INTEREST RATES



The detail of this change in price at a decreasing rate with increase in length of maturity can be seen clearly in the data from which Chart I was prepared. They show that when an obligation bearing a 3 per cent coupon and due in 5 years is shifted from a 3 to a 3½ per cent basis, there is a price decline of 2.28 per cent. When a similar obligation due in 10 years is priced on a 3½ per cent yield basis, the further decline in price beyond that of the 5-year maturity is 1.95 per cent of the price of the 5-year maturity. When a 3 per cent obligation due in 15 years is priced on a 3½ per cent yield basis, the further decline in price beyond that of the 10-year maturity is 1.61 per cent of the price of the 10-year maturity. This illustration could be

continued by 5-year intervals to the point where the price of a 50-year maturity declines only 0.48 per cent more than the price of a 45-year maturity. This is how price declines at a decreasing rate.

The explanation for the increase in size of price change at a decreasing rate with addition of units of time to maturity is to be found in the arithmetic of bond-yield calculations. The annual rate of discount created by a decline in market price below par is the total discount divided by the number of years to maturity. The addition of each year to maturity requires a larger total discount to achieve a given annual rate of discount. However, as years are added to the length of the period to maturity, each year is a smaller proportion of the total number of years to maturity over which the total discount must be spread. Thus the addition of proportionately smaller units of time requires relatively smaller increases in the size of the total discount required to achieve a given increase in rate of yield to maturity.

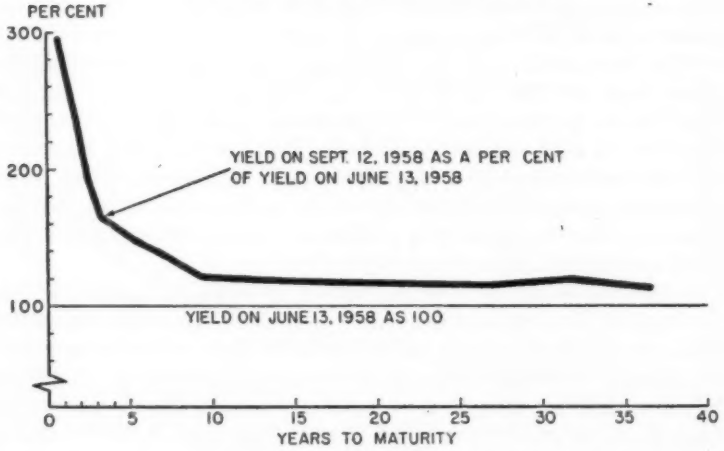
You may notice that the upper curve in Chart I moves farther away from par than the lower curve. Thus the price of a 3 per cent bond due in 50 years rises 14.23 percentage points above par when it is priced on a 2½ per cent yield basis. But the price of a 50-year, 3 per cent bond priced on a 3½ per cent yield basis declines only 11.77 percentage points below par. This is due to the fact that, as price declines, yield is computed on a smaller cost price; while as price rises, yield is computed on a larger cost price.

Difference in size of rate fluctuation for different maturities.—If we stopped here, we would have an unrealistic conclusion about the effect of changes in market rates of interest upon prices for securities of different maturities because even casual observation of the behavior of interest rates in the market shows that short-term interest rates fluctuate much more widely than do long-term rates. To cite an extreme instance, the market rate of yield on 3 months' Treasury bills increased from 0.58 per cent on May 31, 1958, to 2.23 per cent on August 30, 1958. In the same period the average yield on Treasury bonds maturing or callable in 10 years or more increased only from 3.13 to 3.67 per cent. The greater amplitude of fluctuation in short-term rates relative to long-term rates would, except for differences in length of maturity, cause wider fluctuations in prices for the shorter maturities as interest rates changed. In the market this relative instability of short-term rates operates in direct opposition to the stabilizing influence of shortness of maturity. The balance of the two influences determines the amplitude of market-price fluctuations for securities of different maturities.

In order to observe variation in size of change in interest rates for securities of different maturities in a period of rising interest rates, I have prepared a schedule of the yields at which eleven Treasury obligations of different maturities ranging from 8 months to about 37 years were selling on June 13, 1958, and a similar schedule of the yields at which these same issues were selling on September 12, 1958. The time interval between dates is 3 months. Then I expressed the yield for each issue on September 12 as a percentage of its yield on June 13. The result is shown in Chart II.

CHART II

THE CHANGE IN MARKET RATES OF YIELD ON TREASURY SECURITIES FROM JUNE 13, 1958, TO SEPTEMBER 12, 1958

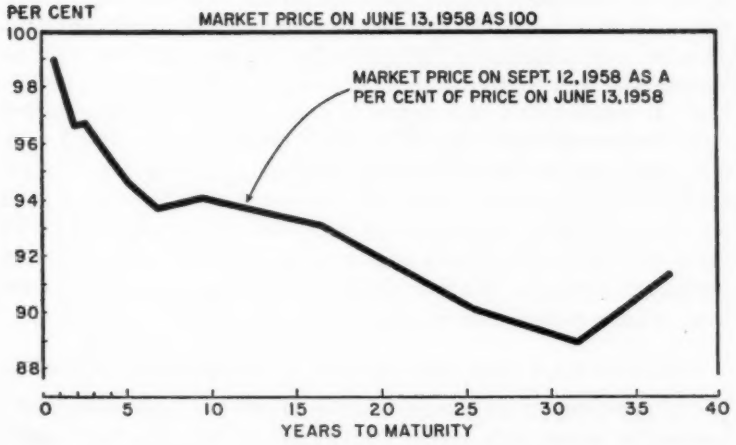


The increase in yields was very much greater for the short maturities than for the longer issues. For example, the shortest maturity in this schedugle is the Treasury 1⅞ per cent note due February 15, 1959. The interval to maturity was approximately 8 months on June 13 and 5 months on September 12, 1958. On June 13 it was selling on a 0.97 per cent yield basis, and on September 12 it was selling on a 2.86 per cent yield basis. The yield on the latter date was 295 per cent of the yield on June 13. By contrast, the longest maturity in the schedule is the Treasury 3 per cent bond due February 15, 1995, with a time interval to maturity on June 13 of 36 years and 8 months. On June 13 it was selling on a 3.12 per cent yield basis, and on Sep-

tember 12 it was priced to yield 3.55 per cent. Its yield on the latter date was about 114 per cent of its yield on June 13. Chart II shows that the relative size of the increase in yield declined sharply as the interval to maturity increased from 8 months to about 3 years, then declined more moderately for maturities from 3 to about 10 years, and that the size of increase was about the same for maturities beyond 10 years. In some other period of rising interest rates, the size of change in yields on securities of varying maturities may be dif-

CHART III

THE CHANGE IN MARKET PRICES FOR TREASURY SECURITIES FROM JUNE 13, 1958, TO SEPTEMBER 12, 1958



ferent from that in the period I have examined, but this period is a good test of the effect on market prices of a much steeper rise in short-term than in long-term rates.

Now how did the proportionately much greater rise in short-term rates affect the magnitude of change in market prices for these Treasury securities of widely varying maturities? I have taken the market price on September 12, 1958, for each of the issues included in this study and expressed it as a percentage of its market price on June 13. These percentages measure the relative size of the decline in market prices for the different maturities. Chart III shows clearly that the much greater changes in market rates of yield for the shorter maturities had less effect on market prices than did the much smaller

changes in market rates of yield for the longer maturities. In general, the line connecting the September 12 price percentages declined steeply from the shortest maturity to the maturity in about 7 years and then declined more slowly, and with some irregularity, to the longest maturities.

If the irregularities in the curve of Chart III were smoothed out, we would have a curve somewhat like the lower curve in Chart I. This leads me to the conclusion that length of maturity is the dominant influence upon the magnitude of fluctuations in market price as interest rates change, in spite of the much greater fluctuations in short-term than in long-term rates. The conclusion may be generalized by saying that, as interest rates in the market change, the magnitude of fluctuation in market prices for securities of different maturities tends to increase with increase in length of maturity but at a decreasing rate of increase. This generalization has significance for investors who seek relative stability of price in money-rate type obligations. It means that a high degree of price stability may be obtained only in relatively short maturities, say, maturities of less than 1 year, and that price instability increases markedly as maturities are extended from 1 to about 7 years. It also means that there is no great difference in price instability for maturities longer than 20 or 25 years. Obviously, the pattern of price change would vary in different periods according to the magnitude of the change in shorter-term rates relative to longer-term rates.

Interest-Rate Risk and the Size of Investment Income

The phenomenon of change in rates of interest prevailing in the market for money-rate type securities affects not only the market prices for these securities but also the size of income obtainable at any particular time and from time to time by investment or reinvestment in money-rate type securities.

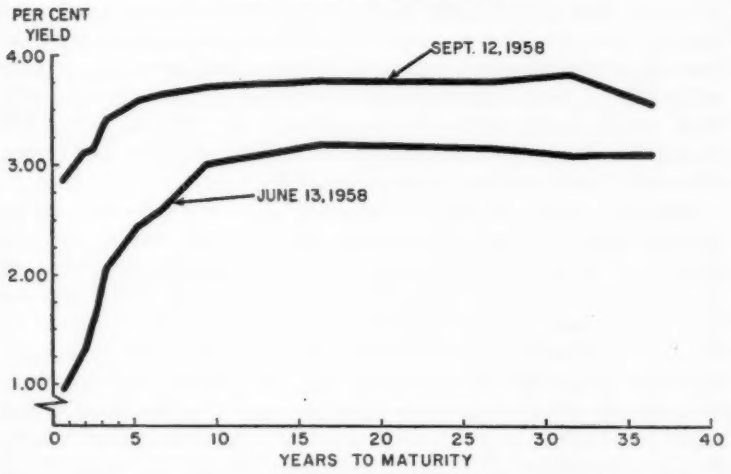
We have first the general proposition that at any particular time yields on securities of different maturities tend to be higher as the length of maturity increases. Thus, generally, the longer the maturities selected for investment, the larger is the rate of yield. When the structure of yields in the market follows this pattern, it is said to form an upsloping yield curve. The pattern of yields on government obligations of different maturities that prevailed on June 13, 1958, as shown by Chart IV, is an example of a markedly upsloping yield curve for maturities up to about 10 years. This chart is constructed

from yield data for the same eleven issues used in the two preceding charts.

However, the pattern of the yield curve changes at times. Sometimes it is much less upsloping and thus flatter. Chart IV also shows the yield curve on September 12, 1958, which was only moderately upsloping. The data are for the same issues. There have, in fact, been times when the yield curve was somewhat downsloping, with yields on the shortest maturities higher than those on longer maturities. The fact that the yield curve does become relatively flat at times, and

CHART IV

YIELD CURVES ON RECENT DATES



even assumes odd shapes with a "hump" toward the middle, raises the question of whether there is any basic tendency for the curve to be upsloping. I submit that there is such a tendency.

The tendency for yield curve to be upsloping.—We have seen that, as interest rates change, the size of market price fluctuations is greater for longer maturities of securities than for short-term obligations. Thus there is more risk of loss of principal inherent in the longer maturities in the event that they have to be liquidated at market prices. Investors in money-rate type securities generally like to minimize this risk, although the intensity of their effort to do so varies considerably among the different types of investors. Thus there is a preference for the shorter-term and less risky issues. Be-

cause investors prefer the less risky issues, they are generally willing to buy them at lower rates of yield than the rates at which they are willing to buy the longer-term and more risky issues. This preference for liquidity is the reason why there is a tendency for the yield curve to be upsloping. The upsloping curve is perfectly logical, in that it provides smaller returns to those who demand the more advantageous terms of investment and provides the larger returns to those who are willing and able to assume the risk of greater fluctuations in market price. In brief, it provides a premium for assuming interest-rate risk.

The yield curve is most steeply upsloping when conditions in the money market are "easy," that is, when there is a relative abundance of funds seeking investment in money-rate type securities. At such times a considerable amount of money comes into the market for more or less temporary investment, pending some other use at some other time. Then the competition of investors for investment media with small financial risk and small interest-rate risk results in a bidding-down of yields on the shorter maturities of high-grade obligations relative to yields on longer maturities.

However, there are times when conditions in the money market become "tight." Demand for money increases, and the demand for short-term money increases more than the demand for long-term money. Under these conditions yields on the shorter maturities rise to a much greater extent than yields on longer maturities. This is not because the shorter maturities have become less desirable from the investors' standpoint but because the stronger demand for short-term money relative to supply has caused a bidding-up of money rates. Investors still prefer short maturities to long maturities, but they are not obliged to accept the smaller returns at the short end of the maturity schedule that prevailed when their preferences dominated the structure of interest rates. With users of money offering higher rates, they happily accept the higher rates.

In the last analysis, the question whether an upsloping yield curve is normal, or usually to be expected, depends upon the question whether relatively easy-money market conditions are normal. I think that in the kind of economy we have now, with the federal government committed to responsibility for economic growth and full employment, a condition of relatively easy money is much more often to be expected than a condition of tight money.

The instability of income on short-term investment.—Regardless of the shape of the yield curve at any particular time, the fluctuations

of interest rates cause changes in the amount of income realized from a given amount of principal invested and reinvested in money-rate type obligations. When principal is invested, a rate of yield is obtained. If securities are held to maturity and the proceeds reinvested, the new rate is the yield prevailing in the market at the time of reinvestment. Except by coincidence, the new rate is different from the old rate. And insofar as it is different, the amount of income from a given amount of principal increases or decreases.

There is fluctuation of income upon reinvestment caused by changes in interest rates for securities of all maturities because rates for all maturities change from time to time. However, the fluctuation is greater for short-term obligations than for those of long maturity. In general, stability of income from funds invested and reinvested varies inversely with length of maturity.

The relative instability of income from short-term obligations is due to two conditions. One is the much greater amplitude of fluctuation in short-term rates. We have observed in Chart II the much greater rise in yields on short maturities than on long-term issues in the period from June 13 to September 12, 1958. Inspection of the chart of interest rates in the *Federal Reserve Chart Book* (Historical Supplement) covering the last forty years shows that relatively wide swings in short-term rates have been characteristic of the money markets. It follows, therefore, that when short-term obligations mature, the rate obtainable upon reinvestment in short-term issues may vary widely from the rate obtained on the original investment. Since long-term rates fluctuate in a narrower range, the yield obtained upon reinvestmet of long-term funds is likely to vary to a smaller extent from the original rate.

The other condition is simply the length of the period of investment. Funds invested in short maturities and reinvested in similar obligations come back into the market in a relatively short period of time. Whatever change has occurred in short-term rates in the interval is realized in terms of income. Thus, if funds are invested and reinvested in obligations maturing in one year, there would be a different rate of yield and a different amount of income each year. In recent years the income from a given amount of principal invested and reinvested in one-year maturities of government obligations would have fluctuated much more than the income from a diversified group of good common stocks.

By contrast, reinvestment of funds invested in long maturities occurs only at long intervals, if bonds are held to maturity. Income is

stable during the period to maturity and changes only when reinvestment occurs after a considerable period of years. Over a long time there may be secular changes in long-term rates that cause the difference in yields from one time to another to be greater than the normally small cyclical fluctuation in long-term rates. This modifies, but does not invalidate, the general proposition that the stability of income upon investment and reinvestment in long-term issues is greater than that obtained by investment and reinvestment in short maturities.

Thus we have a sort of paradox. Market prices of short-term issues fluctuate much less than prices of long-term issues with changes in interest rates. But the stability of income from long-term issues is much greater than that from short-term issues upon investment and reinvestment at maturity. Clearly, the manager of a portfolio of money-rate type securities must decide whether stability of income or stability of principal is the more important in his particular circumstances.

PRICE-LEVEL VARIATIONS AND THE TENETS OF HIGH-GRADE INVESTMENT*

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University of California, Los Angeles

THE TOPIC ASSIGNED to us for discussion at this meeting clearly implies that there may be price-level variations in this country in the future and that they may be of sufficient moment to require appropriate investment policies. It would therefore be reasonable to debate either the outlook for price levels over the longer term or the nature of conservative investment policies which would best meet the probable situation. However, it has been officially suggested to me that we might focus attention on the suitability of common stocks, especially the variety known as "growth stocks," as high-grade investment vehicles in a period of price-level instability. This is my purpose; and in discussing stocks I shall mean those of competitive industrial and commercial companies only.

Although it is not my intention to involve this meeting in attempts to predict the long-range economic future of the country, it seems idle to discuss investment dispositions without noting the general nature of the situations for which we must be prepared. Obviously, we would not all agree on the details of the economic road ahead, but I suspect that most of us expect a continuation of welfare-minded monetary and public budget interventionism, major emphasis on full-employment objectives, a secondary hope for price stability and a balanced budget, large-scale public expenditures, and extensive research and development efforts by both public and private agencies. Conceding that all quantitative estimates must be liberally sprinkled with plus-and-minus signs, it would appear that a middle-of-the-road investment planner might reasonably visualize the coming decade as follows:

1. General characteristics of high-level and growing output, moderate cycles of buoyancy and recession greatly influenced by monetary and public budget manipulation, long-term money rates swinging widely in and about the 1958 range, and an intermittent price-level inflation averaging about 1 per cent per annum, firmly underwritten by habitual cost-push pressures.

* The Bureau of Business and Economic Research, University of California, Los Angeles, assisted the author in data collection, computations, and in other ways.

2. *Possibility* of occasional short booms or depressions which may make sharp temporary impression on the stock market but relatively little permanent impression on either commodity or stock-market price trends.

3. Rapid technological and competitive change, in which products and enterprises are capable of great development or obsolescence in short time.

4. Continuation of heavy taxes.

5. Possibility of war, which would surely distort profit results and dividend rates temporarily and the price level permanently.

The foregoing propositions definitely do not imply that conventional fixed-dollar-amount investments are about to become obsolete or unproductive. On the contrary, they assume that high-grade bond yields of $3\frac{1}{2}$–5 per cent will clearly exceed an inflation-born loss of 1 per cent per year on the principal, even after allowing for the attrition of taxes. The 1 per cent per year inflationary trend is a guess based on evidences of increasing financial sobriety in Washington and relatively greater desire to couple price stability with full employment. If this hopeful projection works out, taxpaying investors may continue to use taxable senior securities and obtain at least a small amount of real net income from them.

Yet the fact remains that inflationary trends impair the real-income productivity of fixed-income investment, while presumably not adversely affecting typically diversified equity positions. Furthermore, public intervention to prevent recession or depression would appear to be a potent insurer of the safety and stability of a diversified equity position. If these things be true, then there may be occasion to indorse the principle of common-stock investment for conservative funds and even to advocate adapting some of our traditional institutions to make better use of common stocks.

At this point we begin to encounter some arguable questions of fact. The first of these is: After a quarter-century of mounting taxes, labor law, and government intervention in business, do the common stocks of leading corporations retain their profitableness and sturdiness and general good prospects?

Evidence on Quality

Since evidence on the trend of stock quality provides only relative data, it is desirable to recall at the outset some of the well-known absolute findings of prior decades. Most famous of these is Edgar L. Smith's *Common Stocks as Long-Term Investments,* which compares

the performances of hypothetical good-quality common-stock and bond portfolios over 17- to 22-year spans in the period 1866–1922. The results, you will recall, strongly favored the stock portfolios. Many subsequent studies point, on balance, to the same conclusion, especially in periods when the general trend of commodity prices is level or upward.[1] The first concern of the present inquiry is, therefore, to ascertain whether the corporate strength which made these records possible is still with us. Pertinent evidence is afforded in the accompanying Charts I–III.

Chart I reports in line-graph form the net-profit results of leading manufacturing corporations since 1926. The upper line shows profits as a percentage of net worth, the lower one profits as a percentage of sales. These figures are collected by the First National City Bank of New York, mostly by adding figures available in published annual reports. Only large and fairly large concerns are included, and the list of corporations is obviously not uniform through the years, though the large number included—about 1,800 in recent years—gives the series impressive validity. The significant facts to be drawn from Chart I are these: First, the percentages earned on net worth in 1953–57 are as good as, or a little better than, those earned in profitable periods in the past—for example, 1940–41, 1936–37, and 1926–29. Labor costs and the corporate income tax have not eroded earning capacity here. Second, there appears to have been a slight decline in the percentage of net profit to the sales of these companies; 1953–57 is a little below 1940–41, and the latter is, in turn, a little below 1936–37. The disparity between the two trends shown on the chart obviously reflects an increase in the ratio of sales to net worth. Economic logic suggests that the earnings rate on net worth has been a dominant criterion in competitive pricing decisions and that the profit percentage on sales has been cut because a lower percentage would still permit a generous return on invested capital.

Chart II presents data drawn from *Statistics of Income,* as compiled by the Internal Revenue Service. The year 1957 is estimated. The bars represent the percentages earned by all manufacturing corporations in the country on their book net worths and sales, be-

1. E. L. Smith, *Common Stocks as Long Term Investments* (New York: Macmillan Co., 1924); C. C. Bosland, *Common Stock Investment* (New York: Ronald Press Co., 1937); K. S. van Strum, *Investing in Purchasing Power* (New York: Barron's, 1926); D. C. Rose, *A Scientific Approach to Investment Management* (New York: Harper & Bros., 1928); W. J. Eiteman and F. P. Smith, *Common Stock Values and Yields* (Ann Arbor: University of Michigan Press, 1953); W. C. Greenough, *A New Approach to Retirement Income* (T.I.A.A., 1951); P. L. Howell, "Common Stocks and Pension Fund Investing," *Harvard Business Review,* November–December, 1958.

CHART I

PROFITS OF LARGE MANUFACTURING CORPORATIONS AS PERCENTAGES OF NET WORTH AND OF SALES. (SOURCE: FIRST NATIONAL CITY BANK; 1958 ESTIMATED.)

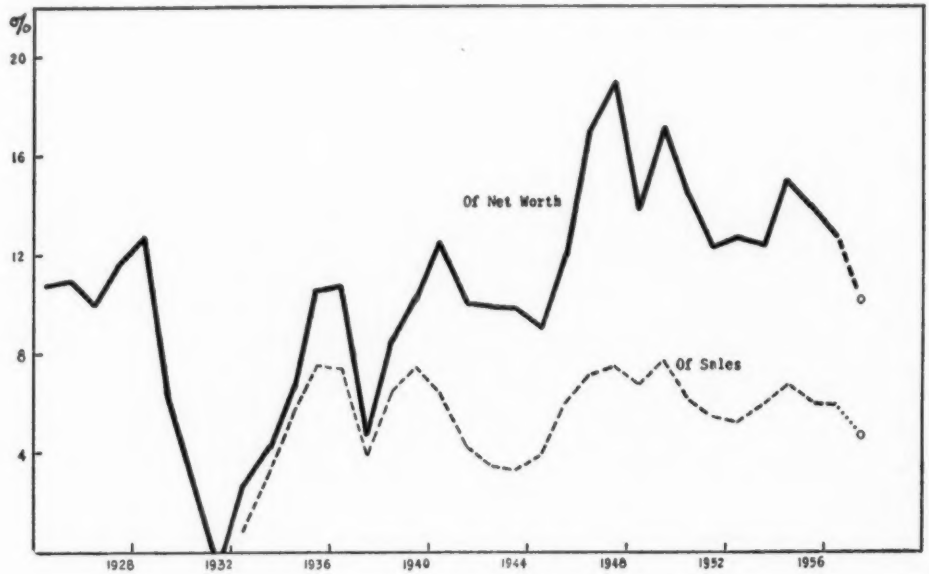
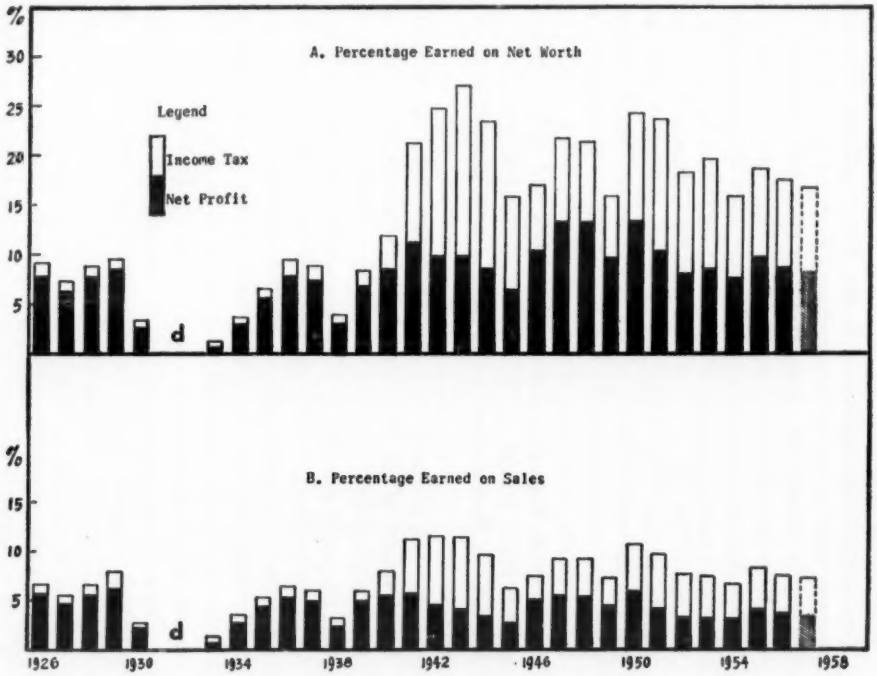


CHART II

CHART II

PROFITS OF ALL AMERICAN MANUFACTURING CORPORATIONS AS PERCENTAGES OF NET WORTH AND OF SALES. (SOURCE: STATISTICS OF INCOME; 1957 ESTIMATED.)



fore and after income taxes. The pretax earnings are shown by the total heights of the bars, the posttax net by the solid portions. It will be noted that the net profit margins earned by manufacturing corporations in the aggregate are not nearly so large as those earned by the large corporations canvassed in the First National City series but that the trends over time are similar. The earnings rates on net worth are firmly maintained, while those on sales have declined since the war. However, this chart has two more significant messages. First, it is clear that the heavy corporate income taxes imposed during the last 25 years—as represented on the chart by the unshaded segments at the tops of the bars—have been paid by widening the pretax profit margin, presumably at the expense of the consumer, and not by impairing the stockholders' profit margins on net worth. Second, it appears that the pretax profit margins on sales—as shown by the total height of the sales percentage bars—are actually a little larger in recent years than they were in the 1920's and 1930's. There is thus a little wider margin of safety between normal operations and red-ink deficits than we had before income taxes climbed to their present levels.

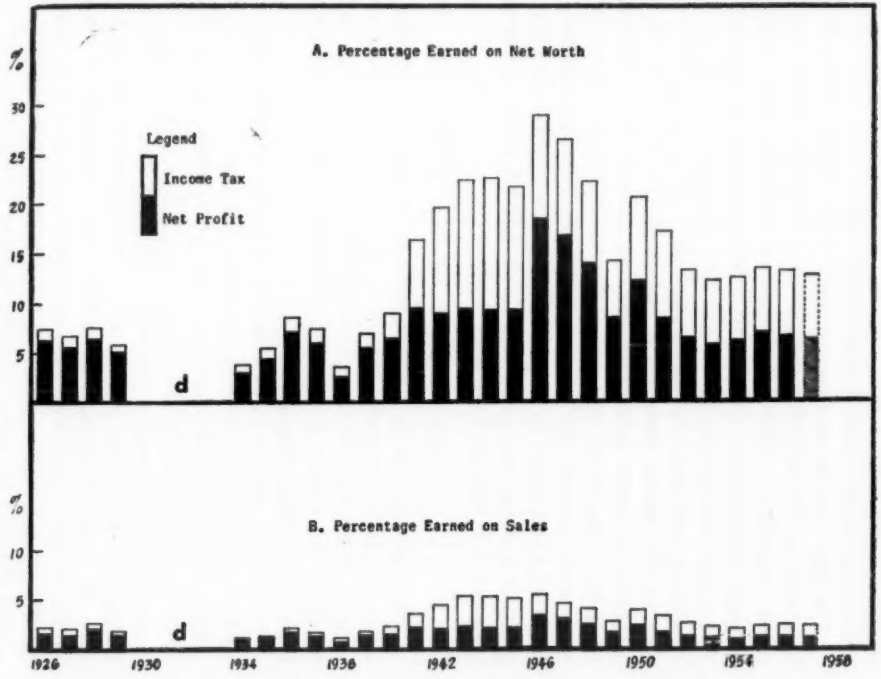
Chart III is similar to Chart II, except that it presents the combined record of all American trade corporations instead of manufacturing concerns. The trends are very similar, though it is apparent that the profit margins of trade corporations are not so high as those of manufacturers. It will also be noted that economic conditions plus inventory and depreciation accounting methods produced almost fantastic profit records for trade corporations in the years 1946–50. These are clearly abnormal and are as little descriptive of earnings trends as are the war years or the years 1931–34.

But reference to depreciation accounting and inventory accounting methods suggests that other accounting devices may be distorting Charts II and III. What of the undervaluation of prewar fixed assets and the consequent understatement of net worth? What of accelerated amortization? Time does not permit an extended review here, but it is possible to cite a study by the Machinery and Allied Products Institute in which a careful attempt is made to measure the ratio of corrected earnings to corrected net worth, the corrections being designed to state both eanings and net worth on an economic replacement-cost basis for each year. The MAPI results indicate that, on a corrected basis, the net profits of all Ameican corporations in 1923–29 and in 1947–56 averaged almost the same percentage on net

CHART III

CHART III

PROFITS OF ALL AMERICAN RETAIL AND WHOLESALE TRADE CORPORATIONS AS PERCENTAGES OF NET WORTH AND OF SALES. (SOURCE: STATISTICS OF INCOME; 1957 ESTIMATED.)



worth, about 5⅔ per cent.[2] The profit level thus defined is appreciably lower than that shown in Charts I, II, and III; this appears to result both from the revision of profit and net worth figures and from the inclusion of all corporations, especially financial and transportation, in the data—but the absence of any downward trend in the ratio of net eanings to net worth is notable here also.

The data on profit margins thus support the proposition that corporations are retaining their financial strength rather well. Most other aspects of corporate finance corroborate this finding. For example, operating losses seem to be less frequent; in the years 1926–29 corporations operating at a loss had 18 per cent of the gross sales of all corporations in the nation, and their losses amounted to 17 per cent of the pretax earnings of the profitable corporations; but in 1952–56 the losers' sales were less than 10 per cent of the total and their losses less than 6 per cent of the others' profits. Other measures show manufactuers' net worth to be about 65 per cent of total assets in 1956 as compared to 75 per cent in 1928, but the working capital position is about the same and times interest earned coverage and cash flow are substantially improved.

Stocks as a Price-Level Hedge

A second issue of fact which must be noted is the matter of the effectiveness of common stocks as price-level hedges or counterweights. This has been so interminably discussed that one must apologize for raising it—yet this problem is the real reason for the topic we are discussing.

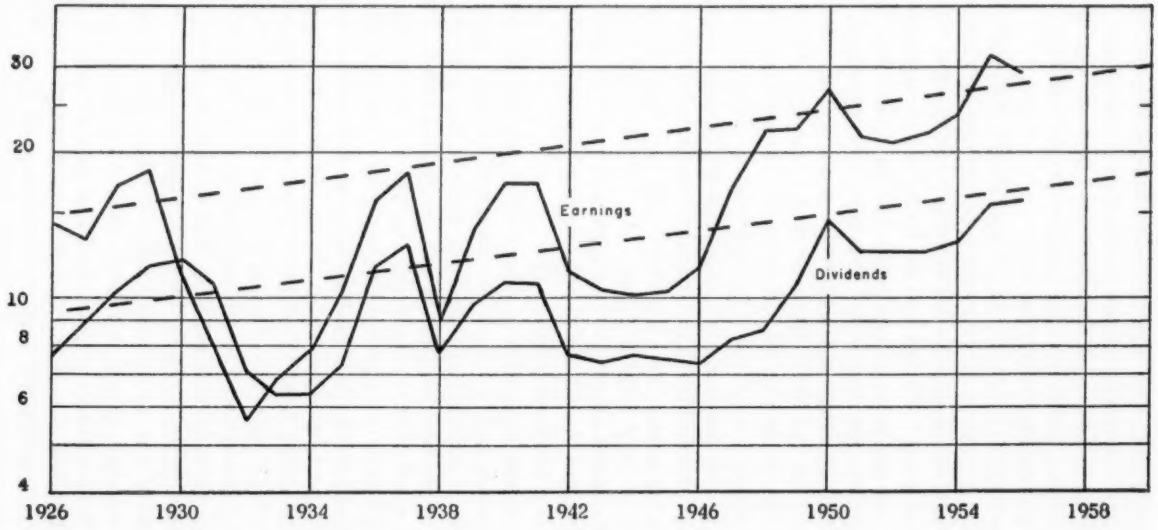
It must be conceded at the outset that public policy, expressed in such media as price controls, excess-profits taxes, credit controls, or public competition with private enterprise, could be the definitive answer to the question at hand. Such public policy has been the answer in certain foreign countries and was partly so in this country during our periods of price controls and excess-profits taxes. However, it seems reasonable to assume that the political hazards to capital in the United States are no greater now than they were in the 1930's. It is therefore pertinent to look at the historical data of the period 1926–57 for generalized indications of the impact of the price level on common-stock investment performance.

Chart IV presents a 32-year study of the earnings per share and the dividends per share applicable to the Standard and Poor's 50-Stock Industrial Stock Price Index. This index is used because its

2. George Terborgh, *Corporate Profit in the Decade 1947–56* (New York: Machinery & Allied Products Institute, 1957).

CHART IV

GROWTH OF EARNINGS AND DIVIDENDS PER SHARE, STANDARD AND POOR'S INDEX OF FIFTY INDUSTRIALS. (REAL TERMS, ADJUSTED FOR PRICE LEVEL.) INDICATED GROWTH RATE 2 PER CENT PER ANNUM.



component stocks are those of large companies, mostly good-quality issues of the type considered for long-term investment. The earnings and dividend figures on the chart have been divided through by the GNP deflator index in order to show the data in terms of the prices which presumably affect them.

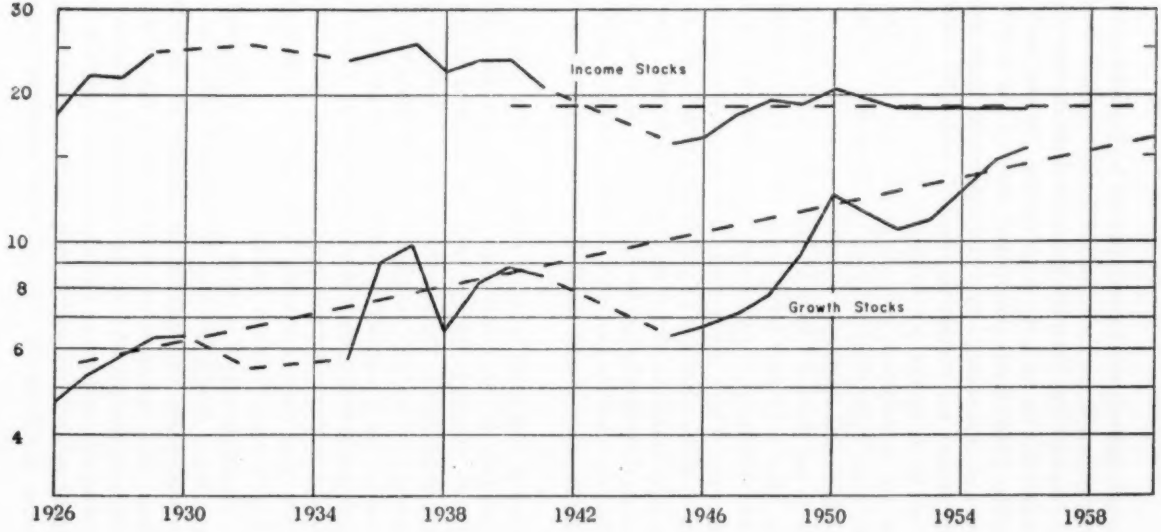
Inspection of Chart IV brings out clearly four significant points: (1) Over a span of 32 years the earnings and dividends available on a portfolio of good-grade big-company stocks have risen more than the price level. Their net upward trend has averaged between $1\frac{1}{2}$ and 2 per cent per year, compounded. (2) In periods of price-level gain, the earnings may lag behind the price-level upswings, and the dividends will definitely lag behind the earnings. This observation is not too clear on the chart because of the complications of depression, war, controls, and taxes, but financial common sense adds credence to the rough indications. (3) Depressions, wars, price controls, and excess-profits taxes are contingencies which may depress per share earnings and dividends for considerable periods, at least in terms of purchasing power; and the chart does not show compensating long periods of very large earnings. (4) The data on this chart are of dubious quality in certain years, notably 1947–50, when strong earnings data are in part the product of non-economic inventory and depreciation accounting methods.

The major indication of Chart IV is, obviously, the finding that the earnings and dividends on this group of industrials over a generation have outclimbed price-level growth and gained an average of nearly 2 per cent per year in real purchasing power. This, of course, means a substantial capital gain in addition to the mounting tide of dividend income. However, it should be noted that the dividend income itself fell by half during the great depression, and, after recovering in part, declined again during the war. It was not until 1947 that the dollar level of dividend payments permanently surpassed the 1927–29 payments. During the interim, the stockholders got less than a fixed-income investment purchased in the 1920's would have brought them and, in addition, had to bear a painful, if temporary, shrinkage in stock prices. This could happen again.

Chart V is in all respects similar to Chart IV, except that it shows only dividend records, not earnings, and compares the performances of a list of 9 growth stocks and 10 non-growth stocks. Data for certain abnormal depression and war years are not shown. This chart has been constructed with the advantage of hindsight; it was prepared in order to compare *ex post facto* the performance of typical

CHART V

GROWTH OF DIVIDEND RATES IN "REAL" TERMS (ADJUSTED FOR PRICE LEVEL). INDICATED GROWTH RATES 0 AND 3.2 PER CENT PER ANNUM.



high-grade growth stocks with that of high-grade non-growth stocks. The upper line shows the record of the non-growth stocks; their dividends declined less than the price level during the depression years but failed by far to keep pace during the war and early postwar years. By 1948, the buying-power level of the 1920's had been regained, and these stocks have since increased their dividends enough to compensate for further increases in the price level, though they have not made up the deficiencies of 1940–48. *They have at no time shown net real-income growth, despite the fact that undistributed profits have been reinvested in the businesses in most years over more than three decades!*

The lower line on Chart V shows the record of 9 major growth stocks. Over a 32-year term, these stocks have increased their earnings and dividends *in real terms* by an average of about 3 per cent per annum. Their depression-time payments declined below the 1920's in dollars but not in purchasing power, but at no time since has a significant shrinkage occurred. Obviously, the capital appreciation on these stocks has been very great. Whether their growth can continue or whether investors seeking to enjoy such growth in the future can select stocks capable of this performance are open questions.

However, one thing is pretty obvious; the average rise of $1\frac{1}{2}$–2 per cent per year *in real terms* shown by the dividends on the Standard and Poor's 50-stock average must be ascribed to the fact that the average contains an assortment of growth and non-growth stocks. The growth stocks have supplied the vital thrust which makes industrial stocks per se appear to outpace an advancing price level. The ten high-grade non-growth stocks depicted on Chart V have caught up, on the average, but the laggards among them have not; and we all know that there are many lesser stocks and lagging industries which were once vigorous leaders.[3]

Generalizations at this point are perhaps gratuitous, but the facts suggest that a strong and smartly selected industrial stock portfolio might reasonably be expected to advance its dividend production, earnings, and capital values a little faster than the price level advances, even though earnings and dividend production may be somewhat irregular and prone to gaps. Capital appreciation accompanying earnings and dividend growth will in a sense compensate for inadequate dividends during inclement economic periods. However,

3. Cf. E. S. Mead and Julius Grodinsky, *The Ebb and Flow of Investment Values* (New York: Appleton-Century, 1939).

our economy is subject to political, technological, and economic change. These are forces which can interrupt income and reverse trends, at least so far as individual corporations and industries are concerned. It is therefore reasonable to inquire whether, over a period of diverse economic trends, reasonably competent investment managements have been able to avail themselves in full measure of the opportunities which seem to be available.

TABLE 1

PERFORMANCE RECORDS OF COMMON-STOCK FUNDS AND CERTAIN INDEXES

Performance = (Asset Value End of Year + Dividend during Year) ÷ Asset Value End of Prior Year, Minus 100 Per Cent

	1948	1949	1953	1954	1956	1957	Average 1948–57	Average 1940–57
S & P 50 Industrial..	6	17	− 2	56	7	−11	18	14
S & P 20 Utilities...	6	31	8	24	5	6	8	12
S & P 20 Rails.....	4	8	−12	57	− 3	−28	11	13
S & P 90 Stocks....	6	18	− 1	51	7	−10	17	14
General-Purpose Fund No. 1.....	0	22	2	31	5	0	12	14
General-Purpose Fund No. 2.....	−1	17	2	43	9	− 4	15	14
General-Purpose Fund No. 3.....	1	18	0	37	7	− 5	13	11
General-Purpose Fund No. 4.....	2	19	− 3	52	13	−14	15	14
General-Purpose Fund No. 5.....	−2	19	− 5	58	12	−22	16	15
General-Purpose Fund No. 6.....	1	20	0	51	11	−11	16	13
Growth Fund No. 1.	−1	16	− 1	48	10	−12	13	NA
Growth Fund No. 2.	1	18	− 3	55	19	−12	17	14
Growth Fund No. 3.	4	22	− 1	34	8	−12	13	12
Growth Fund No. 4.	−3	16	1	63	14	−15	16	NA
Consumer Price Index per cent increase plus 5 per cent.....	8	3	5	4	7	7	7	10

SOME PERFORMANCE RECORDS

For a hasty test of the results of actual common-stock portfolios, the records of major open-end investment companies are most readily available. Accordingly, Table 1 presents some investment company performance data, with performance conventionally measured as the percentage excess of this year's closing asset value plus this year's dividend over last year's closing asset value.

For present purposes, the lessons of Table 1 are two in number. First, the common-stock investment companies do not usually sur-

pass the performance of the market averages. True, they bear a measurable handicap in the form of operating expenses, an unproductive cash position, and a compulsion to diversify, but the fact is that their net performance often does not quite equal that of the averages, despite an enviable opportunity. The only reasonable conclusion is that the imponderables in individual stock situations are so great that good work in times like these parallels the averages, assures against falling far below them, but does not far exceed them. The great similarity in the performance of different funds lends credence to this view. The second lesson from Table 1 has to do with investment objectives. Six of the funds in the table announce as objectives the obtaining of income and appreciation. The other four announce that appreciation is their primary objective, with income incidental. The total performance of the two groups is almost identical. Granted that each group is compelled to diversification and that the income-and-appreciation group will seek appreciation avidly when they see a chance to get it, the record still says that stock-market forecasting is an imperfect art and that a competent and conservative analyst will not dependably improve his total score by stressing a search for market gains.

As a further test of the thesis that foresight is a scarce commodity, Table 2 lists the performance records of 22 stocks which constituted the largest stockholdings of one of our major investment companies in 1946 and 1947. These stocks were not all held throughout both years, but most of them were. Unquestionably the poorer performers among these stocks were bought and held in the expectation of good results in each individual case, and beyond doubt a larger quantity of the more successful holdings could have been carried had their success been anticipated. The table looks at first glance as though the selections were made by guess. However, this is a successful fund, whose total performance ranks high and whose management is deemed astute. Table 2 does not record good and bad luck; it records the process by which good results are achieved with reasonable certainty in a very unstable area.

These last two exhibits seem to justify the conclusion that secure and dependable results with common stocks require both selection and diversification. The very high probability of successful workout which characterizes individual good bonds apparently does not exist to the same extent in stocks, and a diversified position which balances fortuitous gains against unforeseeable losses is an indispensable procedure in a conservative stock account.[4]

4. For bond performance see W. B. Hickman, *Corporate Bond Quality and Investor Experience* (New York: NBER, 1958).

Some Observations on Price

The final point of statistical inquiry before us has to do with price. Stocks are non-reproducible goods; they provide a somewhat irregular income and have no maturity date; the eagerness with which the community desires them varies with popular thought and with the political and economic climate; and the demand for them is also affected by the incomes of stock-buying individuals and institutions

TABLE 2

Performance Records of Leading Stocks Held by Fund Portfolio in 1946–47

Performance = (Median Price in Stated Year + Dividend of Stated Year) ÷ Median Price of Prior Year, Minus 100 Per Cent

Stock	1946	1947	1948	Average 1948–1952	Average 1953–1957
Allied Chemical	10	9	6	15	8
Atchison T. & S.F.	12	−11	37	26	12
Amerada	17	19	21	40	7
Chrysler	− 4	6	13	20	5
du Pont	16	− 1	1	21	22
Eastman Kodak	19	2	− 6	10	25
General Electric	1	−12	8	17	32
General Motors	− 5	0	5	27	24
Gulf Oil	25	4	8	15	31
Int'l Harvester	− 2	3	15	11	6
Loew's	11	−27	−18	1	9
Montgomery Ward	33	−18	4	7	9
J. C. Penney	20	− 8	7	15	8
Sears, Roebuck	20	−15	19	17	12
Standard Oil, N.J.	17	8	18	28	24
Southern Pacific	15	−14	36	25	4
Texas Company	13	7	4	22	25
20th Century-Fox	43	−30	−25	− 2	22
American Telephone	6	5	0	6	7
Commonwealth Edison	8	43	− 3	8	12
Swift & Company	8	1	2	6	9
Liggett & Myers	8	2	5	1	6
Consumer Price Index per cent increase + 5 per cent	25	14	8	7	6

and the other uses such buyers have for their money. Even in the absence of emergency conditions, stock prices are stubbornly variable; during the middle 1920's stock yields were very close to those of high-grade bonds; in the late 1940's stocks yielded almost twice as much as bonds; and now they yield considerably less than bonds. There is thus no stable and enduring yield basis for stock valuation, yet the absence of maturity places extreme emphasis on capitalization rate in arriving at a value estimate. It is probably inherent in the nature of things that stock prices and price-earnings ratios and yields

should move through wide ranges both at short term and over long but irregular cycles.

The quantitative extent of these price cycles is normally not great enough to do unbearable damage to well-diversified common-stock positions which can be held for long periods, particularly if accumulation and liquidation can be advantageously timed or spread over a span of years. This is demonstrated by the studies previously cited. However, we must admit that a wide potential range of stock prices makes an accurate projection of medium-term investment performance almost impossible. Five or even ten years' income plus growth could be heavily impaired by adverse stock-price trends or by adverse liquidating prices. This is not a contingency to be lightly regarded, even in an inflationary era, by any portfolio which must make large distributions or stand ready to do so.[5]

The problem of price may be illustrated by current figures. The immediate dividend yields on the Standard and Poor's 50 stock index, my growth stock index, and my non-growth stock index approximate 3.5 per cent, 2.9 per cent, and 4.5 per cent, respectively. If we make allowance for continued growth and 1 per cent per year of inflation over the next 20 years and assume indefinite retention of holdings, the dividends on each of these groups should over 70 or 80 years amortize today's dollar cost and provide an average income yield of about 5 per cent. But 5 per cent is not an attractive long-term total return by past standards, and principal invested at this level is clearly subject to drastic impairment if the markets revert to a more conservative yield basis.

It is difficult to escape the conclusion that industrial stocks are suitable for conservative investment when the object is the purchase of a very long-term annuity which needs to compensate for price-level changes, but that stocks may be troublesome if the portfolio is subject to market-value solvency tests or liquidation.

Tenets of Investment in Stocks

This cursory review of fact and fancy has been intended to serve as justification for a statement of "The Tenets of High-Grade Investment" in a period of buoyant price levels. A tenet is a principle or a doctrine and, as such, may state either a fact or a way of life. This review has not covered all phases of investment activity, hence will not attempt to phrase a whole creed of investment, but the fol-

5. W. A. Berridge, "Economic Facts Bearing on Some Variable Annuity Arguments," *Journal of Insurance*, November, 1957.

lowing tenets certainly would seem to belong in the creed:

1. The corporate institution is as sturdy and vigorous as it was 30 years ago, and a managed cross-section of the better common-stock equities may be regarded as productive and safe for the very long term.
2. Diversification is indispensable.
3. Both stable-income and growth industrial company stocks seem to earn and pay more dollars after an inflation takes place, but decadent industries or companies may not do so.
4. Price-level protection in an era in which the cost of living may rise drastically justifies the investment of relatively large amounts in stocks, by individuals and by institutions whose liabilities may have to be discharged in future years in large amounts of depreciated dollars.
5. Common-stock dividends, earnings, and prices may decline or lag during depressions, wars, periods of price control, and periods of rapid inflation.
6. Extensive common-stock price fluctuations appear likely in the foreseeable future. This seems to require that accounts subject to continuous dollar-value solvency tests or demand withdrawals use stocks only in modest degree and that those partially obligated make provision for liquid payment-reserve funds, deferred payments, or other ameliorative devices.
7. Finally, it is necessary to admit that we are without any effective capacity to estimate "normal" future prices for stocks or stock groups, even if we believe that we can "guesstimate" their probable future earnings and dividends. We have the price-earnings and yield data of the past, but these are not good benchmarks for judging stock prices in an era when both individuals and institutions fear the value of the dollar and are becoming increasingly uninhibited in their investment policies.

A Concluding Digression

The foregoing are conventional and unsurprising conclusions. They assume mainly a continuation of existing economic trends and no major institutional changes. However, we are not exempt from rather significant institutional changes which may come about as much because of popular beliefs and fears as because of solid economic fact.

There is abroad among us the conviction that the cost of living will continue to trend upward, probably slowly but possibly rapidly.

This has seemingly fostered a "flight into stocks" which has already developed stock-price repercussions and stock-price logic reminiscent of the unlamented New Era. Our new New Era has powerful institutional support in the investment company and the pension trust, among trusts and endowments generally, and may soon have the appealing variable annuity on a substantial scale. It is not unlikely that the entire situation may create a more or less permanent shift in the relative prices and immediate yields of stocks and bonds, with equal or lesser immediate yields on the stocks expected to be compensated by increases due to inflation and growth. This kind of stock-bond price relationship, with the stocks yielding less than bonds, already exists in the case of growth stocks.

No real business damage would of necessity result from this stock-bond pricing situation; financial practices could adjust to a case in which bond and mortgage rates remained above high-grade stock yields. Yet it would be unfortunate if, in hedging against an alleged inflationary drift, individuals and institutions were compelled to abandon too completely the security and liquidity of a senior and guaranteed position. It would be safer public policy to induce debtors and creditors to make some of their bond contracts on a purchasing-power basis, with the bond maturity sums and possibly the coupons adjusted up or down in proportion to changes in the price level. In fact, I am confident that several billions of long-term federal purchasing-power bonds could be sold over a few months' time to people and institutions who are now reluctantly turning to stocks, at an interest rate well below the market rate for straight bonds. Quite possibly the savings on interest rate would finance the excess payments required by our slow inflation. In any event, a successful step in this direction might help to solve several pressing economic needs,[6] including that of holding our second New Era stock market somewhere near the bounds of common sense.

6. Nearly a third of the 11 million employees now covered by trusteed pension plans enjoy protective clauses which to some extent adjust pension expectations to final pay rates or similar measures. Many of the others obtain revisions of plan as economic elements change (see New York State Banking Department, *Pension and Other Employee Welfare Plans* [1955]).

DISCUSSION

JOHN F. CHILDS:* As a discussant, I had only a small part to play in the panel. Some of the material presented pertained to common stocks as a hedge against inflation. I chose to comment on utility stocks as regards inflation. Contrary to the belief in some quarters, investors do look for utility stock prices to reflect the effect of inflation. Rather than look at how they have acted in the past, I turned my attention to how they should perform. Since I had no prepared paper, the following is a brief summary of my remarks.

Provided that utility companies have the ability to earn, then the method used to limit these earnings will determine whether their common stocks will represent a hedge against inflation. What should be the approach in this regard? It seems to me to depend largely on the purpose of regulation. In their own service field, utilities represent a monopoly, and this is the reason for regulation. If direct competition existed, there would be no need for it. In other words, regulation is a substitute for competition. If that be true, then we should look to the broad field of competitive industry for our clue as to what is proper.

This whole question revolves primarily around the rate base as one of the components used to determine a utility company's earnings, the other being the rate of return. Of course, an adjustment for inflation can also be made through rate of return. As regards rate base, the choice is between original cost and one giving allowance for the change in the value of the dollar, whether we call it fair value or reproduction cost. Prices in the competitive field of our economy are not tied to original cost in any sense of the imagination. And if we apply our reasoning that regulation is a substitute for competition, then original cost as a determinant of prices is quite out of step with the rest of our economy and should not be used in the utility industry.

Utilities should not be isolated in a special category in our entire price structure. Therefore, on the basis of the purpose of regulation, it appears that utilities should be so regulated as to give effect to a change in the price level, and this should be reflected in the prices of the stocks. Original cost is used in some states, but in others recognition is given to the change in the price level. A universal extension of the latter approach would seem best suited to our over-all system of private capital, and this would conform to what investors do expect and have a right to expect.

* Irving Trust Company.

DOUGLAS A. HAYES:* I suppose the theoretical functions of a discussant have several dimensions. One certainly is to highlight some of the concepts contained in the paper which seem to have exceptional and novel merit for the field of knowledge with which we are concerned. Another may be to expand on the arguments with a view to suggesting possible modifications of analysis or application. A third dimension, which in my opinion is more often than not excessively applied, is to pinpoint areas of disagreement with the ideas of the author. Indeed, it sometimes seems that some have approached their task solely in these terms. In order to avoid this chronic pitfall, my remarks will be specifically directed to all of these areas, although not necessarily separately.

There are several especially provocative views presented in this paper to which I would like to direct your contemplation. First, Professor Sauvain advanced the notion that a direct result of our potential greater stability in economic activity is to make a much wider spectrum of corporate bond prices primarily a function of interest-rate movements rather than of changing risk evaluation. As "easy"-money conditions are likely to be in vogue during cyclical declines, this situation tends to produce price changes of medium-grade bonds that may appear highly contradictory to some investors. Instead of such prices declining to reflect the increased financial risk usually associated with cyclical adversity, they may actually advance because of the lower level of prevailing interest rates. The fact that yields on Baa corporate bonds steadily declined from an average level of around 5 per cent in October, 1957, to 4.662 per cent in May, 1958, at the low point of the recession suggests that factors operating to reduce the credit qualities of medium-grade bonds during a moderate cyclical decline have a lesser influence on price than the effects of the downward shift in interest rates during such periods.

This revised status of medium-grade obligations suggests to me some potential features which Professor Sauvain did not mention. (I am now shifting my role to that of expanding on his arguments.) First, it may be that these bonds may not only show greater price stability than in earlier eras, but, in fact, it is possible to argue that they might even be more stable pricewise than bonds of the highest quality. The argument would be as follows: under conditions of "tight" money during booms their credit quality would appear most assured, thus partially offsetting this monetary condition, while on the other side their prices would be supported by "easy"-money con-

* University of Michigan.

ditions at times when increased financial risk was emerging from the state of business activity. In this connection, it is notable that Moody's index of Baa bond yields moved down 44 basis points between October, 1957, and June, 1958, and then up 35 basis points between June and November. The corresponding movement of Aaa yields was down 53 basis points and then up 55 basis points. Assuming roughly the same maturities on both indexes, therefore, medium-grade bonds were actually in the past year more stable in price than highest-quality obligations. Paradoxically, this would suggest that, from a "price-risk" standpoint, medium-grades are "safer" than high-quality obligations.

Second, if investors firmly believe that the economy will in fact be more stable in future years, then medium-grade rated bonds might logically be a relatively more attractive investment medium, so long as a significant yield spread exists in their favor. This observation merely means that the rating services have not recognized the new economic realities and some bonds probably are condemned to a lower-quality standing than would be justified under hypothesized conditions of increased economic stability. The inertia of the rating services is well known, and this condition may produce opportunities for the astute investor.

Another excellent point made in this paper was to draw attention to the dilemma that exists when investors wish both stability of market price and relative constancy of income. As matters stand, large investors with predominant liquidity needs, such as commercial banks, must expect their earnings from their government portfolios to be relatively unstable through time. This suggests that a strong liquidity position is not an unmixed blessing to such investors. These investors might be well advised to examine and analyze their liquidity needs carefully and perhaps lengthen their portfolios somewhat to obtain both higher income on the average and also greater stability.

To my mind, however, the tendency of the yield curve to flatten out or even become downsloping during periods of high interest rates may be due partially to attempts to resolve this dilemma. In a sense, this phenomenon represents a reduced demand for short-term securities relative to somewhat longer-term securities. A part of the cause of this reduced relative demand for short-terms may well be the realization that the handsome rates then prevailing may be transitory and that better long-term results incomewise might be obtained by a moderate extension of maturities at such junctures.

Some have found it hard to understand why some investors, and

large city banks in particular, choose to lengthen their average maturities at the very time when there is little reward for doing so, namely, when there is a flat or down-sweeping yield curve. I submit that one reason may be to avoid a significant erosion in income (or to maintain the prevailing high level) if interest rates decline substantially at a later date. Therefore, I am compelled to disagree moderately with Professor Sauvain's observation that even during periods of high interest rates most investors will continue to prefer short to long maturities.

There is perhaps an even more important reason why some investors may shift their maturity preferences toward somewhat longer-term securities during periods of high interest ratio. Any such change in preferences will, of course, affect the shape of the yield curve. It can be summed up by stating that expectations of future interest-rate movements change as the entire yield curve moves up or down. Many institutional investors, known as the "sharp-pencil" boys in the jargon of the trade, unquestionably attempt to garner capital gains by correctly forecasting interest-rate developments. And this applies even to many commercial banks, which are usually presumed to be highly conservative investors.

As the entire curve shifts upward, there comes a time when these investors might regard the probability of significant future increases in interest rates as less likely than a downward movement. Although Professor Sauvain questions the wisdom of this policy, it does appear in fact that some investors predicate their policy on this expectation, and consequently there is some shifting of shorts to intermediates or longs to maximize potential capital gains. Moreover, the potential additional price risk involved in *new* commitments at the long end might appear increasingly less as these securities continue to drop in price and their yields advance. Therefore, even those investors who attempt to limit their price-risk exposure may be tempted to lengthen their maturity schedules moderately under conditions of high interest rates.

The fact that monetary policy has its most direct and immediate effects on the supply of bank funds which are ordinarily "compartmented" to the short and intermediate end of the market is probably an additional cause of the changing shape of the yield curve. In addition, as Professor Sauvain pointed out, demand for funds tends to vary more widely in this area. But I still feel that the other factors mentioned above are contributory causes, although it is impossible to assess their relative importance.

Finally, in my opinion, Professor Sauvain is to be commended for showing specific methods whereby investment operations, even though limited by policy to money obligations, can be aggressive, on the one hand, or defensive, on the other. The aggressive policy of using borrowed funds to attempt to lever up moderate price changes on Treasury obligations into large returns on the investor's equity has apparently had more widespread adherents than previously suspected if the disclosures following the bond market debacle of last summer are taken at face value. Shifting maturity preferences from time to time in accord with expectations are also aggressive in nature, although there can be a wide variation in degree with respect to these operations.

Undoubtedly a spaced maturity schedule wherein reinvestment is periodically made at the long end of the schedule at the average rates prevailing through time is the best defensive policy, as Professor Sauvain indicated. This policy has the basic advantage, of course, that the average maturity of the portfolio is considerably shorter and thus less exposed to price risk, yet the "cost" yield on the account will be determined by the average prevailing rates on the furthest maturity. Moreover, some modest capital gains will emerge with no change in interest rates if a stable up-sweeping yield curve generally prevails through time. But as I agree with Professor Sauvain that we are likely to witness significant dynamic changes in rate levels through time, this assumption of a stable yield structure becomes highly problematical. Up until 1951, the investor could ride the yield curve with some assurance; today it might be a jarring experience.

In conclusion, I feel that Professor Sauvain presented a well-documented and stimulating study of the effects of changing interest rates on portfolio policies. While almost infinite ramifications of principle and policy are possible in this area, his analysis is basically sound and of value both to practicing portfolio managers and to those of us who practice finance vicariously in academic circles.

CORLISS D. ANDERSON:* We are meeting at a time when stock prices are at their all-time high; we are in the rarefied air of the summit, though another higher summit may be visible in the years to come. Investors have an inflation fear, driving them toward the goal of capital appreciation rather than the goal of present income.

* Northwestern University.

My own investment experience has certainly been better in stocks, especially in growth stocks, than in bonds.

Investors are prone to purchase "growth" stocks that have become popular (and high priced) and are impatient with those stocks whose earnings do not rise as soon as expected. It takes five to ten years. Furthermore, investors do not buy the Dow-Jones Average; they buy certain stocks which may or may not do as well as the market as a whole.

Looking back, it is easy to spot growth stocks, and a record of growth stocks always, or nearly always, looks splendid. But that is after they have made their demonstration; the selection is after the fact.

We can expect inviting market opportunities from time to time because the high price-earnings ratios fall when earnings growth falters or slips.

Those who fear a 2 or 3 per cent inflation in living costs per year, on the average, have already received in price appreciation in stocks during the last year or so the equivalent of about ten years' inflation. To ask more appreciation soon may be greedy.

The price of stocks rests on earnings, and inflation can hurt some companies; one man's price (of product) is another man's cost, and sometimes the latter man can't get his increased costs out of his selling price.

Investors in bonds have been hurt three times in the last three years; they are sick of bonds. When such is the case, it may be a good time to buy bonds, especially municipals, because of their tax-free position.

Investors in stocks (or in any security) should be comfortable in holding what they own. If they are not, they are paying in health and "shortgevity" for increased profits. It is better to settle for a four-room house in retirement and invest with some safety looking forward to that day rather than trying to speculate one's self into a position to own an eight-room house in retirement and not live "so long." We know, or should know, that happiness is not related to the size of a man's house.

In spite of all that has happened, and is perhaps likely to happen, an investor should still be diversified as between equities and bonds (or their equal). Foreign competition and greatly stepped-up research in this country will have the effect of holding the cost of living down. Perhaps a level consumer price index for six or eight months might

have a sobering influence on those investors who have purchased common stocks out of fear for the dollar.

Wars are the real cause of inflation, and when they come, stocks always drop in price; investors are then afforded the opportunity (which most don't take) to hedge against the inflation to follow.

ROGER W. VALENTINE:* Professor Sauvain in one section of his paper sets forth the general proposition that, at any particular time, yields on money-rate type of fixed income securities of different maturities tend to increase as the length of maturity increases. When plotted, the resulting curve is an upsloping one, the degree of slope varying according to market conditions. This tendency for the yield curve to slope upward centers, he says, in investors' preference for liquidity and a willingness to accept a lower yield on short maturities. This type of curve, in his opinion, is perfectly logical, in that it provides a premium in terms of yield to the investor who is willing to assume the risk of greater fluctuations in market price that is inherent in an increase in the length of maturity. In addition to being logical, Professor Sauvain also considers an upsloping yield curve to be a normal type of curve in that it will usually prevail in the market, because, as he says, in the type of economy we have today a condition of relatively easy money is much more often to be expected than a condition of tight money.

Certainly, the structure of interest rates which has prevailed in the money markets in this country over the past quarter of a century affords strong support to this view. Few people at the present time, therefore, would take issue, I believe, with Professor Sauvain's statement that an upsloping yield curve is a normal type of curve because it will usually prevail in the market. Because of the general acceptance of this point of view today, a comment or two on the subject, perhaps, may be in order here.

First, it should be noted that only since the early 1930's has the structure of interest rates in the money market been represented predominantly by an upsloping yield curve. Prior to the depression the yield curve on money-market securities most of the time tended to slope downward rather than upward.

Second, during the last twenty-five years there were factors operating in the short-term money market, other than investors' preference for liquidity, which contributed to the maintenance of the low short-term interest rates that were essential to the existence of an

* Halsey, Stuart & Co., Inc.

upsloping yield curve. For instance, since the middle 1930's, in contrast to previous years, the reserve position of the commercial banks most of the time has been such as to make for low short-term money rates. During these years, for only a few relatively short periods of time has Federal Reserve policy been designed to restrict the availability of reserve bank credit. Likewise, huge excess reserves created by gold imports in the late 1930's, the pegging of short-term rates during and immediately after the war, and three efforts to stem a business recession by monetary action have all had a significant influence in keeping short-term money rates low during this period.

As one looks ahead these days, is it proper to assume that similar technical forces operating in the money market will continue to be a significant factor helping to maintain a low short-term interest rate? Is it not possible that over the next decade or two conditions in the money market may be quite different from what they have been over the past quarter of a century? For example, if we continue to be harassed by certain inflationary pressures, as might well be the case if the economy expands at the rate that many anticipate it will over the next two decades, the reserve position of the commercial banks generally may be relatively tighter much of the time than it has been in recent years. And one would not look for a gold flow to this country such as we had in the late 1930's or another pegging of interest rates. It could well be, therefore, that the demand for and the supply of funds in the short-term market, as compared with the long-term market, would produce interest-rate structures quite different from those to which we have become accustomed and have looked upon as being normal.

It may turn out that experience over the next decade or two will continue to support Professor Sauvain's assumption regarding the type of yield curve that is likely to prevail in the market. From an investment point of view, however, even though it can be argued that an upsloping yield curve is a logical type of curve, we need to be cautious, I believe, in assuming that such a type of curve will necessarily prevail most of the time.

THE INVESTMENT OUTLOOK

THE OUTLOOK FOR LONG-TERM INTEREST RATES*

SIDNEY HOMER
Scudder, Stevens & Clark

DR. SAMUEL JOHNSON, in his dictionary, defined what we now call a government bond in the following terms: "A fund established by the government, of which the value rises and falls by artifice or chance." The definition sounds as though Dr. Johnson was a trifle sour on government bonds. In his time, British Funds had moved from a 6 per cent yield to a 3 per cent yield and were on their way back to 6 per cent. The definition altogether omits those economic causes of fluctuations which will engross most of our attention today. We, in our turn, however, should not forget the influence of artifice or of chance.

Today I shall attempt to analyze the outlook for long-term interest rates in three ways, each one incomplete by itself. The first approach is statistical; it proceeds from an expected economic environment to a corollary volume of credit demands and the flow of institutional funds to meet these demands. The second approach proceeds from an expected economic environment to probable monetary and fiscal policies. The third approach proceeds from an expected economic environment to the investment policies of institutions and private investors. In summary: first, sources and uses of credit statistics; second, official monetary and fiscal policy; third, the investor's reaction to both.

Let me at the outset assume for purposes of argument a compromise and an unexciting economic model for 1959, with a gradual upslope throughout the year that will not carry the Federal Reserve Index of Industrial Production up to its previous high before the end of the year. This is an average increase in this index of only about ½ point a month or less: as straight and dull a profile as some of last year's chemise fashions. Nevertheless, it assumes a sustainable and sustained period of business improvement.

* This paper by Sidney Homer and the following papers by Roy L. Reierson and Warren L. Smith were presented at a meeting of the American Finance Association held in Chicago on December 29, 1958. The meeting was under the chairmanship of John Lintner, Harvard University. The papers were discussed by James S. Duesenberry, Harvard University.

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First, then, a statistical approach that endeavors to concentrate on long-term credit. Long-term credit uses can be divided into four principal types: mortgages, corporate bonds, municipal bonds, and long-term Treasury bonds. Sources of funds can be divided into three types: banks, other institutions, and individual investors.

Real estate mortgages in 1959 should continue to absorb a lion's share of total available long-term credit, and builders should continue to cry ruin and to plead for a much larger share. Gross mortgage financing at $27 billion this year was twelve times gross common-stock financing. Net new mortgage formation absorbed almost two-thirds of all new long-term credit in 1955, and one-half of the total in 1958. Net mortgage volume available to investors in 1959, after allowing for a large annual increase in amortization and the fact that the 1958 FNMA appropriation will be disbursed in 1959, should be about the same as 1958's $13 billion net.

Corporate bond financing is declining. In 1956 corporate investment in plant and equipment plus inventory exceeded internal funds by $10 billion; in 1958 it is probable that internal funds exceeded investment by $3 billion, an extraordinary $13 billion decline in financial needs. In 1959 there should still be a small excess of internal funds. However, corporate liquidity was heavily reduced: from 53 per cent[1] in 1954 to 39 per cent in 1957, the equivalent of a decline of $17 billion. Liquidity is still only about 44 per cent. Substantially better liquidity may still be desired. For this and other working-capital purposes, external financing should continue in fair volume. Net corporate bond financing is estimated at $7.5 billion in 1957 and $6.4 billion in 1958. In spite of the well-sponsored caveat that "round numbers always lie," I shall estimate $5 billion for 1959.

Tax-exempt financing four years ago absorbed barely $3.5 billion net, while in 1958 this figure had risen to $5 billion after retirements. The sum absorbed is by no means large compared to the size of our economy, the functions of local governments, and their resources. It is 39 per cent of the sum absorbed in the year by real estate mortgages. Nevertheless, as demand for municipals is specialized, such a new volume is a very large market influence. In spite of larger local expenditures, net municipal financing is apt to be about the same in 1959.

Adding together only these credit demands—namely, mortgages and corporate and municipal bonds—we find that the total annual

1. Liquid assets to current liabilities.

increase has varied surprisingly little from year to year over the last five years.

It is anomalous that in the recession year of 1958 this subtotal set a peak, and in the recovery year of 1959 it may decline slightly. However, during 1958 many past projects were permanently financed, and no such backlog remains today. In view of the important increase in long-term interest rates between 1954 and 1957 in contrast to the stability of these totals, we must conclude that this segment of demand analysis, while it shows that long-term credit demands have been large and grew even larger in 1958, gives comparatively little clue to the year-to-year volatility of long-term interest rates.

Funds invested by non-bank institutions in these three types of bonds and mortgages have also been remarkably stable during recent years, ranging between $15 and $16 billion. They should continue at about the $16 billion magnitude next year.

Subtracting the net purchases by non-bank institutions from the net increase in mortgages, corporate, and municipal bonds, we arrive at a residual financed by commercial banks or individual investors.

This residual does increase irregularly through 1958 and then declines in 1959. However, it covers such a narrow range during such eventful years as to lead me to doubt that it alone provides an adequate statistical explanation of bond-market trends. There remain, however, two additional supply and demand factors which vary widely from year to year, and which I believe will help to explain the wide range of bond prices. The first is the highly erratic contribution which commercial banks make to financing the market for long-term bonds and mortgages. The second is the spasmodic, diffident, and sometimes even bashful flirtations of the Treasury with the long-term investment market.

Commercial banks' purchases of mortgages, corporates, and municipals have ranged in recent years from a low aggregate of about $1.6 billion in 1956 to highs of $3.4 billion in 1954 and $4.5 billion in 1958.

Subtracting this net investment of commercial banks from the previously calculated residual, we arrive at a much smaller and more variable residual after the purchases of all institutional investors.

The residual seems to parallel the rise in interest rates closely through 1957 but does not explain 1958. The analysis is still incomplete. In recent years the annual new-issue volume of new Treasurys

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over ten-year maturity has ranged between zero and almost $3 billion a year. Although this appears a small volume in comparison with total government debt and bank assets, it is a significant addition to the total of long financing.

If we add this volume of long Treasurys to our totals of other bond and mortgage financing and subtract all institutional purchases, the final residual, that is today, the total which was absorbed by miscellaneous and private investors, has varied widely between $2 and $6 billion a year.

When we add long governments, 1958 provides the second largest residual volume since 1954. In 1959 if the Treasury issues no long bonds, the residual will be the smallest since 1954; if it issues $5 billion, the residual will be the largest.

These figures tend to suggest that in 1959 the dynamics of the long bond market will not arise under our compromise model from large changes in private long-term credit demands or in the flow of institutional funds. Supply and demand dynamics will be provided by two factors: Treasury debt management and the contribution of commercial banks as influenced in part by monetary policy.

This brings me to the second approach: through monetary and fiscal policy. As my colleagues today have been assigned that area, I shall confine my comments to the following points:

1. The excellent flow of internal corporate funds, the increase in corporate tax reserves, and the need for better liquidity will continue to help the Treasury place short governments outside the banking system, especially in the latter half of the year.

2. Although no large upsurge in bank loans is to be expected from my colorless economic assumptions, so little of bank loans were liquidated in the rump recession of 1957/58 and so little were liquidity and capital ratios restored that a dollar of loan expansion in 1959 should have a money-market effect of $2 or $3 in 1955. If so, Reserve policy need not be restrictive to have a severe effect.

3. A moderate loan increase is to be expected and, therefore, the banks, without an aggressively easy Reserve policy, will hardly buy the large aggregate of municipal bonds and real estate mortgages they bought in 1958.

4. The Treasury's floating debt today of about $72 billion, although awkwardly organized, does not seem too large for the economy. If we add up Federal Reserve holdings, reasonable secondary reserves of commercial banks, corporate tax reserves, and the operating reserves of local governments, foreign banks and others, all

appropriately in short governments, the total requirements for one-year governments about equals the outstanding volume. While the economy would have difficulty with a smaller floating debt, it hardly needs the large volume of 1–10-year governments which constantly threatens to augment the floating debt. Substantial extension of these medium maturities before, or as, they become short will be an objective of Treasury policy. Statistically at least there should be some $3 billion or so of funds available for long-term Treasurys next year.

5. Debt refunding, however, requires the co-operation of the investing public. Even in a profit-and-loss economy, economic insecurity, as Professor Galbraith says, is cherished almost exclusively either in the second person or in the abstract. The Treasury's success in any refunding program will be determined in large part by market trends, by investor policy, and by market expectations.

Where, then, does this analysis stand? Its initial statistical approach merely brought out that sources and uses of private credit should be in balance and that dynamics should arise largely from monetary and fiscal policy. It thus seemed to pass the burden over to my colleagues. But in suggesting that monetary and fiscal policies will themselves be limited and determined partly by available funds, market trends, and the policies and expectations of institutional and private investors, it has resumed a share of the burden.

For almost two decades, up to five years ago, the market for high-grade bonds and mortgages was almost exclusively an institutional affair. Furthermore, most of these institutions were captive buyers: legal restrictions and tradition forced them to invest their huge annual receipts in bonds and mortgages at going rates. Bond-market trends could then be analyzed largely in terms of institutional money flow.

Two events have outdated this overneat statistical approach: First, legislation has extended the power of pension funds and some other institutions to buy equities. Tradition has also changed in favor of equities. The institutional investor is still far from free to choose his form of investment, but some now have a real choice, and most have at least a small area of maneuver. Second, the private investor in the last five years has at times re-entered the high-grade bond market in volume for the first time since the 1920's. The huge volume of bond financing of recent years overtaxed institutions and forced yields up until they were high enough to attract other buyers. Since 1954 some $13 billion net of corporate and municipal bonds has been bought by non-institutional investors. In addition, the

speculative public for a brief period this year was attracted to a "sure thing" and became bond-minded.

These two novelties have had an important effect on the bond market. It now loses and gains some funds inversely to the relative popularity of stocks—not a large amount compared with the vast gross volume of new bond financing, but significant at the margin. Thus the bond market has taken to discounting expected events in a manner that was discussed in the economic textbooks of forty years ago but was rarely noticeable during the many decades of institutional monopoly. The sharp rise in bond prices in late 1957 and the parallel decline in mid-1958 were both evidences of an attempt to discount in a few weeks events which, if they had materialized, would have taken months or years adequately to alter supply-and-demand relationships. Expectation of inflation has dominated the declining bond market of 1958, and, as it ebbs and flows, it will continue to be a basic market influence.

Bond prices, furthermore, have been declining most of the time for twelve years. In some areas this has been the largest decline in the history of these markets. Their final debacle of 1958 has left bonds with few speculative friends: cynics would say bonds have reached that nice point where it is equally impossible for them to gain character or to lose it. In 1959, the bond market will not be helped by its record; the psychological odds will be against it at the start. Institutions will buy bonds in large volume, but, at the margin, investors with freedom to choose longs, shorts, or equities will be skeptical of bond prices. Bonds under our economic assumptions will have to continue to demonstrate a convincing relative and absolute attraction. People will say "if bonds can do so badly in a year of slack, what hope is there for them when recovery, according to accepted American tradition, turns into a boom?"

The answer, of course, is that in the next boom bond prices will do very badly. Bonds have done relatively badly during every American boom. Those who expect next year to see an inflationary upsurge in consumer credit, in housing, in inventories, and in capital expenditures should have no doubt about a weak and unreceptive bond market. These optimists (or shall I say pessimists) should answer the question "How is all this to be financed?" By a bond market that had trouble financing 1958?

Nor is it necessary to spend much time on the effect of a business downturn. The balance of supply and demand for long credit today is close. If the economy turns down in 1959, bonds and mortgages,

with the exception of governments, will quickly become in short supply. This will be aggravated by the lack of imminent large new capital programs, by the improved liquidity achieved in 1958, and by the anticipatory market decline of 1958. No large backlog of delayed financing now exists such as we discussed here two years ago. This backlog first restrained and then helped depress the recession bond market of 1958. Bond prices in a declining economy should again advance sharply without the aid of public speculation, and in spite of Treasury financing.

But today my analysis is more complex. I am not discussing a boom or a recession. I am intentionally attempting to analyze the effects of a dull compromise economic model. This is almost the only type of model which seems to permit much scope for doubt. Under this outlook, inflationary expectations, which have reached a new postwar high in articulate investment circles, will be disappointed: modified, postponed, but probably not extinguished. This could argue for an interim period of psychological readjustment: an interim period of increased popularity or reduced unpopularity for bonds. Looking through this temporary possibility, how may we sum up the medium-term outlook for the bond market?

In three words: Treasury debt management.

Implicit in this analysis is continued large credit expansion, but no upsurge such as began in 1955. No return to the protracted glut of corporate bond financing such as characterized 1957 seems to be in early prospect. Market pressures under our economic assumptions should be less on corporate bonds than on other types of bonds and mortgages. Non-bank institutions as a group are no longer net liquidators of long governments but rather have become small net buyers and should next year have a billion dollars or so a year of funds for long governments. The Federal Reserve should continue to follow what Honor Tracy calls the "straight and narrow path between right and wrong." The banking system should find more loans and hence provide much less long-term funds than in 1958. Private investors should not soon be confident bond buyers. Our statistical analysis suggests that if the Treasury sells no long, bonds will be in short supply, and if the Treasury sells $5 billion of longs, bonds will be in oversupply. Somewhere between there should be a balance. Just where will depend on the novel techniques that the Treasury is expected to adopt in an effort to reach funds which ordinarily do not buy bonds or mortgages.

Gradual economic expansion such as we are analyzing should not

exert much pressure on bond prices without an undue volume of Treasury financing. During the early stages of economic recovery, the bond market has usually remained high and yields have been low. In contrast, at the very beginning of this economic recovery the bond market declined steeply to its approximate postwar lows. Bond yields today are attractive in relation both to other yields and to past bond yields. This means that some part of a future credit boom has already been discounted. Eventually, of course, if economic expansion is sustainable, the boom will come and with it even higher yields for bonds than now prevail. Because market psychology is now adverse, this eventuality should again be discounted before the fact. I do not believe that objective analysis of a gradual recovery permits us to go further than this. To revert to Dr. Johnson's definition, economic analysis cannot include the impact of artifice or of chance.

THE CREDIT OUTLOOK

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THE CREDIT MARKETS have completed an exceptionally hectic and strenuous year. This is adequately illustrated by the extreme gyrations of interest rates over the last twelve months. In the brief period since November, 1957, money rates and bond yields have moved through almost an entire swing of the cycle. From peaks not seen in a generation, rates and yields dropped steeply to recession lows, then firmed dramatically once more. Never before have our markets witnessed so sharp a swing in so short a time. To the extent that the volatility of interest rates in 1958 reflected the precipitous business recession and the subsequent abrupt recovery, such drastic fluctuations in market conditions are less likely in 1959. The credit system, however, will nonetheless be confronted with some troublesome problems in the year ahead.

THE LESSONS OF 1958

The business recession of 1957–58 was the sharpest in twenty years, but it was also one of the shortest in our modern economic history. Recovery, moreover, has been broad and vigorous. Although credit policy was aggressively easy during the recession and has been no more than neutral so far during the recovery, the rebound in interest rates after midyear was even more rapid than the previous decline, and this may have some bearing upon the outlook.

Recession and credit ease.—Business activity reached its low point in April and turned up sharply thereafter, but credit continued easy and most money rates drifted downward until around midyear. The reasons were twofold: demands for short-term credit were slack, and the Federal Reserve was continuing its policy of credit ease.

The bulk of the decline in bank loans was in loans to business, which dropped off considerably in the first few months of 1958. Particular weakness was evident in loans to metal, petroleum, coal, chemical, utility, railroad, and sales finance companies, but most other categories of business loans also declined. This helped impart an easier tone to the credit environment, even though real estate loans and, especially, loans on securities increased.

In addition, the Federal Reserve was following an aggressively easy credit policy. From November, 1957, through June, 1958, the Federal Reserve released over $3.6 billion of reserves to the banking system through open-market operations and reductions in reserve requirements. Assuredly, nearly $1½ billion of the reserves so provided went to offset the persistent outflow of gold which began in February, and another $750 million was used to reduce member-bank borrowings to nominal levels. However, this still left almost $1½ billion of additional reserves to support the acquisition of Treasury securities and other investments by the commercial banks, and the banking system rapidly and energetically put these additional reserves to use.

The vigor and efficacy of the Federal Reserve's easy credit policy in this period is strikingly illustrated by the phenomenal expansion in total bank loans and investments—the most meaningful measure of the amount of credit made available to the economy by the commercial banking system. In the four months from the beginning of March—when member-bank borrowings had been reduced to nominal levels—through June, bank loans and investments in the aggregate increased by over $11 billion, or about 7 per cent. This is the largest and fastest rise in bank credit ever registered in peacetime. With so huge a volume of short-term credit injected into the market place, it is not surprising that money-market rates continued to sag even after business activity had turned the corner.

The recovery.—The rebound in interest rates, when it came, was even stronger and faster than the previous decline. The shift in the trend was sparked by the growing evidence that business was recovering, by the realization that credit was therefore unlikely to be eased further, and by a resurgence of inflationary psychology.

Federal Reserve policy, in fact, turned less easy after the middle of 1958. Reflecting the sharp rise in money-market rates, the discount rate was raised in two steps from 1¾ to 2½ per cent, and reserves were provided much less freely than in the early part of the year. Despite the recoil of business from the trough of the recession, however, credit policy has not yet retraced its course in any substantial way. At no time through the end of 1958 could Federal Reserve policy be described as tight or restrictive; at most, one may say that the Federal Reserve has backed away from aggressive credit ease into a more neutral position.

Nor have demands for short-term credit shown any robust recovery. Bank loans to business advanced in the second half of 1958, in

contrast to the decline in the comparable period of 1957, but this has been due in large part to a smaller decrease in loans to sales finance companies. It is only for food companies and so-called "miscellaneous" business borrowers that loan demands have been notably stronger than in the corresponding period of 1957.

Money-market rates and bond yields, however, have outdistanced the relatively moderate changes in credit policy and credit requirements. A contributing factor undoubtedly was the liquidation of speculative purchases of government securities, many of which had been acquired on very thin margins in late 1957 and the first half of 1958, when prospects seemed to favor a protracted period of credit easing. The rapid advance in interest rates took place despite support purchases in June and July of nearly $2 billion of government securities by the Federal Reserve and the Treasury. At the end of 1958, most rates and yields were substantially above their midyear lows; money rates were still well below their peaks of the previous year, but some bond yields had reached the high marks of 1957.

Expectations versus reality.—The record of 1958 supports two pertinent observations. The first is that market sentiment has a powerful effect upon the behavior of interest rates. In November, 1957, spurred by the first reduction in the discount rate, the market began to reflect the widespread expectation of an aggressive easing of credit by the Federal Reserve; moreover, the severity of the drop in business activity encouraged the belief that very low interest rates would prevail for some time to come. In the summer of 1958, as the economy resurged with unexpected vigor, the prevailing expectation was for renewed inflation and a return of tight credit. In both phases, as noted, market fluctuations were accentuated by the consequences of speculation in Treasury obligations.

The second observation is no less important. Although the amplitude of the swing in interest rates was greatly enhanced in both directions by exaggerated expectations regarding the future, neither the timing nor the direction of movements of interest rates appears to have been significantly affected. Had expectations been less extreme and more accurate, the changes in the bond and money markets presumably would have been more moderate, but the basic trends would probably not have differed very much. Despite the unusually strong effects of psychological factors, the direction of interest rates continued to respond to general business conditions, Treasury debt management, and the policies of the Federal Reserve.

This conclusion is reassuring; it suggests that, after due weight

has been given to the imponderables of public sentiment in appraising the outlook, we may continue to look to basic economic factors as the key determinants of credit trends and market prospects.

Business Prospects and Credit Needs

Unlike a year ago, the economic trend today is clearly pointing upward. The major factors that contributed to the steepness of the recession—liquidation of inventories, cutbacks in business investment outlays, the drop in automobile sales, and the downtrend in home building—have spent their force and appear to be reversing themselves. New peaks of output and activity are in prospect for 1959.

Economic expansion is almost always associated with rising demands for short-term credit. However, the extent to which this will apply to the year ahead cannot be measured with any degree of assurance. The variables that affect credit requirements—such as business and price trends, liquidity, credit policy, and alternative avenues of financing—are too numerous and too complex for quantitative analysis and forecast. Some general notions, however, may be gleaned by comparing the present situation with conditions that prevailed four years ago, when the economy was also emerging from a recession.

Pattern of business activity.—In many ways the current economic environment does indeed bear a striking resemblance to that of early 1955. The rise in industrial production in recent months has been generally comparable with that of the earlier recovery period. Then, as now, inventories had been liquidated on a sizable scale; this phase was followed by a renewed buildup which gained momentum as 1955 progressed. Today, too, some accumulation is anticipated for the year ahead, especially as the prospect of a troubled labor scene may provide added incentive to stock up in the months to come, giving a concomitant boost to the borrowing needs of business. Total construction activity is also rising, as it did in the previous recovery period.

In other respects, however, the outlook today differs from that of four years ago. Then there was considerable talk of scarcities of important raw materials and shortages of industrial capacity, and this helped lay the foundation for the ensuing sharp rise in plant and equipment outlays which became an important source of credit needs as the investment boom took hold. Today, raw materials are plentiful, while industrial capacity not only is much more abundant but is being utilized less intensively. Outlays designed to modernize facili-

ties and improve efficiency may show some strength in 1959, but there is no evidence as yet of any widespread desire to increase outlays for additions to capacity. Thus, while a renewal of the business investment boom is likely at some point in the future, it is doubtful that this will develop soon enough to affect credit needs importantly in 1959.

Another important difference is in the prospective demand for consumer credit, which is closely linked to the outlook for automobile sales. While sales of new passenger cars are generally expected to be in the range of 5½–6 million in 1959, compared with the 4½ million estimated for 1958, this would still be far below the record 7.2 million of 1955. Thus, while 1959 may show a large increase in consumer credit, the increase should fall considerably short of the $5.4 billion of 1955, and the bank-held portion should advance by a smaller amount than the $2.3 billion rise registered in that year.

Prices.—The course of prices is a further important factor in the credit outlook. Indeed, since the gross working capital of corporate business alone is currently estimated at more than $236 billion, a 1 per cent advance in prices and costs may add close to $2½ billion to such requirements.

Since midsummer, the price index of industrial products has been inching upward—reminiscent of its behavior in the early stages of the 1954–55 business recovery. About mid-1955, however, the price rise began to quicken, and by the end of 1956 this index had increased by about 8 per cent. Whether a similar experience lies ahead is currently a subject of debate; so far, prices have been restrained by the swift improvement in productivity and the presence of large unused industrial capacity. As the speedy advance in output that is characteristic of the first phase of a recovery slackens, however, the rise in productivity must be expected to slow down, while capacity should gradually become more fully utilized.

In addition, there is every prospect of further pressure from the side of the wage-cost-price spiral. Large and costly wage demands loom ahead, and while it is not possible to forecast the extent to which they will be met or the extent to which prices will be increased as a result, it seems reasonable to expect that the trend of costs and prices—and hence of financing requirements from this source—will be upward.

Liquidity.—Yet another pertinent consideration is that business enterprise has entered the current recovery in a far less liquid position than in 1954 or, for that matter, than at the start of any previous

business upturn in recent history. In the middle of 1954, the liquidity ratio of non-financial corporations—that is, the ratio of cash and government securities to current liabilities—was about 52 per cent. However, liquidity continued on the generally declining trend it had been following in the postwar era and reached a low of 39.0 per cent in September, 1957. Only slight improvement was achieved during the recession; the ratio in September, 1958, was 42.5 per cent. Some further increase has apparently taken place in recent months, but corporate liquidity is still well below the average of recent years.

Assuredly, there is no fixed standard of corporate liquidity which must be maintained; liquidity could conceivably decline to new lows without unsettlement to business or credit conditions. Also, cash flows are increasing with better profits and rising non-cash expenses. Nevertheless, it is difficult to avoid the conclusion that business in general is less plentifully provided with the resources for financing another large increase in inventories and receivables, the usual corollaries of expanding business. Should the economic trend continue upward, therefore, it would appear that business enterprise sooner or later will have to place considerable reliance upon the credit markets, including the commercial banks, for the financing to cover these needs. These needs would be enhanced if, as seems possible, costs and prices also resume their upward course.

Financing the Treasury

Adding to the prospective demands for short-term credit in 1959 are the financing problems of the Treasury. These are likely to be far more troublesome under current conditions of a substantial budget deficit than in the calendar years 1955 and 1956, when the budget was running a surplus. The dimensions of the problem depend upon the size of Treasury receipts and expenditures, which may not become discernible for some months, but as of today it is reasonable to guess that a budget deficit of about $5–$6 billion may be in store for the calendar year 1959. In addition, some $48.6 billion of marketable Treasury securities (excluding weekly bills) will require refinancing in the course of the year and will entail some cash attrition.

There is little disagreement that in an inflationary environment the Treasury should do as much financing as possible outside the banking system and place minimum reliance upon short-term obligations. In recent months the Treasury has succeeded in lodging a respectable amount of new securities outside the banking system, albeit at short term. Business corporations, which in recent months

have improved their liquidity through the sharp rise in profits, have been important buyers. Also, the rise in interest rates has made short-term Treasury obligations attractive once again to foreign banks and other investors.

Some further increase in non-bank holdings of Treasury obligations in 1959 is a reasonable expectation. If the improvement in profits persists, business corporations will probably continue to add to their governments, although not at the rate of recent months; the margin between tax accruals and payments may be expected to narrow, while outlays for inventories and for plant and equipment may be advancing, at least moderately. It may be possible also to find a market for a modest amount of Treasury bonds among savings institutions as a group, and, if the interest rates are attractive, other investors, too, may increase their portfolios. Nevertheless, it appears that the Treasury will find it necessary to rely upon the commercial banks to absorb a substantial part of the increase in its debt in 1959. This prospect is in striking contrast with the experience in 1955, when the commercial banks offset some 60 per cent of the rise in their loans and other securities through liquidation of Treasury obligations.

The Commercal Banks

The commercial banking system enters 1959 with the amount of bank credit and deposits at record heights and materially above a year ago. The ability of the commercial banks in the aggregate to add to their government security portfolios depends upon credit policy, that is, upon the volume of bank reserves made available by the Federal Reserve System. The expansion of bank loans, however, may be affected by additional factors which merit comment.

Lending capacity.—Despite some contraction of bank loans in the recent brief recession, total bank loans are estimated to have increased in 1958 as a whole to a new record, some $3 billion or so above a year ago. This, incidentally, places loans some $26 billion, or 37 per cent, above the close of 1954.

That commercial banks have entered the business recovery in a relatively highly loaned position is further indicated by the ratio between capital funds and risk assets. This ratio stood at 16.2 per cent in mid-1954, dropped to 14.7 per cent in mid-1956, and had recovered only slightly to about 15.0 per cent as of mid-1958. Assuredly, as in the case of corporate financial ratios, no particular significance should be attached to any specific numbers, especially since

this ratio has been in a declining trend for several decades. Nonetheless, banks are reluctant to allow their ratios to deviate materially from those of their competitors and the banking system in general. This situation is not likely to inhibit a further rise in bank loans in 1959, but it does suggest that commercial banks will be less aggressive in their lending policies, particularly in the term loan field, than was the case in the previous business expansion.

A related consideration is the fact that loans now comprise a substantially larger proportion of deposits—some 47 per cent—than at the end of the 1954 recession, when the ratio had been about 39 per cent. Here again the ratio by itself is not very meaningful: it has been rising for many years and is still significantly lower than it was prior to the great depression. However, here again there is support for the thesis that lending policy is likely to be less aggressive than it was four years ago.

Liquidity of banks.—Additional evidence to bolster this general conclusion is provided by the relatively low liquidity of the commercial banks as a group. The banking system added some $9 billion to its investment in government obligations in 1958, and its liquidity has improved somewhat as a result, but holdings of short-term Treasury securities, relative to assets and deposits, are still lower than in any postwar year prior to 1955.

Implications and Conclusions

This brief review of salient factors and prospects in the credit markets leads to some conclusions that are not altogether comforting and raises some vexing questions.

1. If, as appears probable, the cyclical rise in business activity carries through 1959, the demand for bank loans will assuredly advance. At present, the prospects for automobile sales and business capital expenditures suggest that the rise may be considerably smaller than in the record year 1955—perhaps, as a stab in the dark, one may guess a figure about half as large as the $12 billion expansion in commercial bank loans that took place in 1955.

2. Partly because of the budget deficit and the financing problems of the Treasury, however, the commercial banks may be expected to add to their holdings of government obligations in the year ahead, in contrast to their large liquidation of such securities in 1955. Hence aggregate demands for bank credit in the year ahead will probably exceed considerably those of 1955.

3. The experience of the past year has emphatically demonstrated

the folly of attempting to outguess market expectations and their impact upon rates and yields. The prospect of large credit demands in the aggregate and of further cost and price inflation support the likelihood of additional upward pressures upon short-term interest rates in 1959. However, the rapid rebound of interest rates after mid-1958 doubtless anticipated these possibilities to some extent.

4. This combination of expanding business, widespread inflationary psychology, and Treasury deficit financing greatly complicates the task of the Federal Reserve, even though the reduced liquidity of business and banking, compared with four years ago, may help make a restrictive policy more effective. Credit policy may be expected to remain cognizant of the Treasury's financing problems, which presumably means supplying additional reserves to the commercial banks; however, such reserves are not likely to be made available on generous terms. The Treasury, in turn, will presumably adapt its financing to conditions in the credit market and will not look to the Federal Reserve to facilitate its task by easy credit policies, inappropriate in an environment of expanding business and rising prices. The result of this combination may well be a generally firm level of interest rates but nevertheless a greater expansion in the money supply than is consistent with an effective antiinflationary policy.

5. As regards the longer term, it would be well to keep in mind the lesson of the 1954–57 cycle, namely, that when the economy again faces a combination of booming activity in consumer durable goods and a broad advance in business investment, as it surely will one day, demands for short-term credit will rise rapidly and materially, unless meanwhile, in some way not clearly discernible today, we shall have succeeded in halting the persistent rise in wages, costs, and prices.

THE OUTLOOK FOR FEDERAL RESERVE AND TREASURY POLICY*

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I. INTRODUCTION

THE OUTLOOK FOR monetary and fiscal policy for the next year must obviously be considered in the context of the general economic outlook. This is particularly true of monetary policy, since the administrative flexibility possessed by the Federal Reserve System permits continuous adaptation of monetary controls to the changing state of the economy. Fiscal developments, at least for the first half of the year, are a bit easier to predict, because, in the absence of major changes in the international situation or in the domestic economy, there is likely to be little discretionary fiscal adjustment until the 1960 budget goes into effect at midyear. Accordingly, I shall review briefly probable budgetary developments and then consider the general economic situation and the outlook and problems that seem likely to confront the Federal Reserve during 1959.

II. THE FISCAL OUTLOOK

Based on daily Treasury statements through early December, it appears that Treasury cash payments to the public for the second half of (calendar) 1958 will be roughly $45.9 billion, with cash receipts for the same period amounting to about $34.6 billion. On this basis, the cash deficit for the second half will be about $11.3 billion. According to the September budget review, the corresponding amounts for the entire fiscal year 1959 are cash expenditures $94.1 billion, receipts $80.4 billion, and cash deficit $13.7 billion.[1] If these estimates turn out to be correct, cash outlays in the first half of 1959 will amount to roughly $48.2 billion, with receipts $45.8 billion, and a cash deficit of $2.4 billion. Recent reports, however, suggest that increased military outlays and higher farm price-support costs will boost expenditures by something in the neighborhood of a billion dollars.[2] At the same time, since recovery has almost certainly pro-

* The author wishes to express his appreciation to Professor John Lintner for many helpful criticisms of an earlier draft of this paper.

1. *1959 Federal Budget Midyear Review* (Washington: Bureau of the Budget, 1958).

2. *Wall Street Journal*, December 10, 1958, p. 2.

ceeded at a faster pace than was expected at the time the midyear budget review was prepared, receipts—particularly from the personal income tax—will probably be somewhat higher than was then foreseen. Thus a cash deficit of about $2.4 billion seems a reasonable estimate.

On the basis of the above estimates, cash outlays will probably be in the neighborhood of $49 billion in the first half of 1959, or about $3 billion greater than in the last half of 1958. On the other hand, cash receipts will probably run around $46.5 billion, or about $12 billion higher than in the second half of 1958. A considerable part of this increase in receipts will be due to the operation of seasonal factors, such as the concentration of collections under the corporate income tax in the first half of the calendar year. In addition, the projected increase is due partly to the expectation of rising incomes resulting from recovery.

According to its September projections, the Treasury planned to finance $6 billion of the cash deficit in fiscal 1959 by reducing the balance in the general fund, which amounted to the unusually high total of $9.7 billion in June, 1958.[3] In view of the size of the balance in the general fund and the prospective deficit remaining as of early December, it appears that net cash borrowing of something in the neighborhood of $\$\frac{1}{2}$ billion will be necessary in the first half of 1959. Gross borrowings will be much larger than this, however, because of the unevenness of tax receipts, which are heavily concentrated in March and June. The Treasury plans to raise about $2.6 billion of new money through the first quarter in connection with the issuance of the new series of 26-week bills. Another $1.5–$2.0 billion is apparently to be raised through the issuance of additional securities for cash in January.[4]

Treasury refunding operations should be a somewhat less worrisome problem in 1959 than during the past year. The largest operation occurs early in the year—in February—when $14.9 billion of refinancing comes up. However, the Federal Reserve System and the Treasury investment accounts hold $5.8 billion of the two issues maturing at that time, leaving $9.1 billion of publicly held securities to be refunded. Another large refunding—a $13.5 billion issue of certificates—is scheduled for August. The Federal Reserve and Treasury investment accounts hold $8.3 billion of this issue, the re-

3. *Federal Government Receipts from and Payments to the Public, Supporting Tables, Fiscal Years 1958 and 1959* (Washington: Bureau of the Budget, September, 1958), p. 11.

4. *New York Times*, November 19, 1958, p. 53.

maining $5.2 billion being publicly held. The only other refunding operation of any size comes up in November and involves two issues aggregating $8.9 billion. Two issues of Treasury bonds reach their first call dates during 1959, one in June and one in December. The June issue amounts to $5.3 billion and the December issue $3.5 billion. Whether or not these issues will be refunded in 1959 will presumably depend upon how interest rates and the state of the security markets in 1959 compare with what the Treasury foresees in this regard for the period up to 1962, when both issues reach their final maturity. Very likely, refunding will be postponed. In general, it would appear that problems of debt management should interfere relatively little with the freedom of action of the Federal Reserve during 1959.

III. The General Economic Outlook

Gross national product in real terms (valued at 1954 prices) fell from a peak level of $409.6 billion in the third quarter of 1957 to $386.7 billion in the first quarter of 1958, a drop of 5.6 per cent. By the third quarter of 1958, GNP had risen to $396.9 billion, a rise of 2.6 per cent. It has been estimated that GNP at current prices in the fourth quarter will be approximately $450 billion. Assuming that no rise in prices occurs from the third to the fourth quarter, this will represent an output of about $406 billion valued at 1954 prices.[5] Thus it appears that, by the fourth quarter, the economy will have moved in real terms nearly back to the peak level of the third quarter of 1958. Although the original decline was the largest and most rapid of the postwar period, the recovery through the fourth quarter appears to have been quite satisfactory. However, there is still a surprisingly large amount of unemployment—amounting in November to 3.8 million workers or 5.9 per cent of the labor force on a seasonally adjusted basis.

Between the first and third quarters of 1958, GNP valued at current prices rose by $13.2 billion. The main factors responsible for this expansion were a rise of $3.8 billion in government purchases ($2.5 billion federal and $1.3 billion state and local), a decline of $4.5 billion in the rate of inventory disinvestment, and an increase of $5.3 billion in personal consumption expenditures. Business outlays on plant and equipment continued their earlier decline, although at a much reduced rate, but this decline was partially offset by a

5. These and later calculations were based on the assumption that the implicit price deflator for GNP has moved in the same proportion as the movements in the average of the indices of consumer prices and wholesale prices.

slight pickup in residential construction. Consumer expenditures on durable goods also continued to decline, but at a reduced rate; however, this decline was far more than offset by substantial increases in expenditures on non-durable goods and services.

The marginal propensity to consume out of GNP has been rather small during the present recession both on the downswing and in the upswing through the third quarter of 1958. In the downswing from the third quarter of 1957 to the first quarter of 1958, this was due both to a small decline in disposable income relative to the fall in GNP—resulting from an increase in transfer payments, stability of dividends in the face of a sharp decline in corporate profits, and a fall in personal taxes—and to a small decline in consumption expenditures relative to the drop in disposable income. Thus, while GNP fell by $19.8 billion, disposable income fell by only $3.7 billion, and consumption expenditures by $2.1 billion. From the first to the third quarters of 1958, disposable income rose more rapidly relative to GNP than it had fallen during the decline—a rise of $13.2 billion in GNP being accompanied by a rise of $9.0 billion in disposable income. However, personal consumption expenditures rose by only $5.3 billion. The marginal propensity to consume out of disposable income was only about 60 per cent during the downswing and about the same during the first two quarters of the upswing. This contrasts with a marginal propensity to consume of nearly 95 per cent during the long upswing from the second quarter of 1954 to the third quarter of 1957. Taking account of the relation between disposable income and GNP, consumption expenditures rose by roughly 60 per cent of the rise in GNP during this period, as compared with a 40 per cent ratio during the first two quarters of the present upswing. This is a manifestation of the well-known ratchet effect.[6] Multiplier effects working through consumption have thus been rather small in the recovery so far. However, when real per capita disposable income rises above its previous peak level of the third quarter of 1957—which it had not yet done as of the third quarter of 1958—we can presumably expect a more pronounced response of consumption to further rises in income.

The important question for early 1959 is whether the autonomous

6. J. S. Duesenberry, *Income, Consumption, and the Theory of Consumer Behavior* (Cambridge, 1949). It should be noted that the ratios referred to above are computed from current dollar aggregates undeflated for population and price changes. If the data are deflated, the marginal propensity to consume is increased during the downswing and decreased during the upswing in 1957–58. However, deflation raises the marginal propensity to consume during the 1954–57 upswing, so that the contrast drawn above is actually sharpened.

forces making for recovery will be strong enough to continue pushing the economy upward at a rapid rate. The latest Department of Commerce survey of business investment plans indicates that plant and equipment expenditures continued to decline in the third quarter of 1958 and will show only fractional increases in the fourth quarter and in the first quarter of 1959.[7] The McGraw-Hill survey likewise does not indicate an early recovery for plant and equipment expenditures. Some increases in government purchases can certainly be expected, at both the federal and the state and local levels. But it is difficult to see how these could rise by more than $2–$3 billion in the first quarter and another $1–$2 billion in the second (seasonally adjusted annual rates). Housing starts have been rising steadily on a seasonally adjusted basis, and maintenance of the present level or perhaps a small increase may be expected in early 1959. But this is unlikely to be a significant expansive factor; moreover, as pointed out below, housing may be adversely affected by rising interest rates. I see little else that can be depended upon. Of course, there will be an induced increase in consumption which could become a somewhat more powerful factor if the ratchet effect comes into play, as suggested above. In addition, it appears that the decline in inventories may have bottomed out in October, and some impetus can be expected from the inventory accelerator. However, the potency of the inventory expansion depends to some extent upon the strength of the basic forces at work.[8] Moreover, inventories have been our most serious destabilizer in recent years, and it would seem desirable to begin thinking about ways to prevent an excessively rapid inventory buildup rather than rely upon inventory investment as a recovery device.

If these observations are correct, they suggest a possible slowing-down of the pace of recovery in the early part of 1959. Of course, if we were nearing capacity operations, a slowing-down of expansion would perhaps be all to the good. However, I believe we are still rather far from realizing a level of output of goods and services that in any sense represents practical full-capacity production. I shall attempt to justify this view in the next few paragraphs.

One of the most curious features of the American economy during the postwar period is the erratic fashion in which productivity has changed. The year-to-year changes in average output per worker have varied between zero in 1956 and 5.9 per cent in 1950.[9] The

7. *Wall Street Journal*, December 10, 1958.

8. The possibility of a steel strike at midyear may stimulate some abnormal inventory accumulation in the second quarter.

largest increases were in 1950, 1951, and 1955; in the latter two years the increases were 3.3 and 5.4 per cent, respectively. In addition to 1956, when no change at all occurred, the smallest changes were in 1949 (1.5 per cent), 1954 (0.2 per cent), and 1957 (1.2 per cent). A moderate increase of 2.5 per cent appears to have occurred in 1958.[10]

It is interesting to note that the years 1950 and 1955 which followed our two earlier postwar recessions showed by far the largest increases. In each of these years there were substantial reductions in unemployment as a per cent of the labor force. In addition, in the year 1951 when unemployment showed the sharpest drop from the preceding year of the entire postwar period (from 5.3 to 3.3 per cent of the labor force) there was a very substantial increase in output per worker.

Following the unusually large increase in 1955, productivity experienced unusually small increases in 1956 and 1957 and only a moderate increase in 1958. These small increases are rather curious in light of the fact that gross investment in fixed capital (new construction and producers' durable equipment) amounted to $56.4 billion in 1955, $57.6 billion in 1956, and $56.4 billion in 1957 (all valued at 1954 prices), amounts larger than in any other postwar years. Gross investment in 1958 will probably amount to about $50.5 billion, as large an amount as in any year except the immediately preceding three.

Between 1951 and 1955, both prosperous years of relatively high employment, GNP, valued at 1954 prices, increased by $50.9 billion from $341.8 billion to $392.7 billion. In the years 1951–54, inclusive, total gross investment in fixed capital amounted to $196.4 billion. Thus, assuming a one-year lag for the gestation of fixed capital investment, the marginal gross output-capital ratio for this period comes out to 25.9 per cent ($50.9 billion + $196.4 billion). That is, it took approximately $4 of gross investment to add $1 to gross capacity output during this period.[11] Assuming that the $220.9 billion of gross investment which occurred in the years 1955 through

9. Average output per worker was calculated by dividing the GNP valued at 1954 prices by the sum of civilian employment and the armed forces.

10. Changes in output per man-hour in manufacturing follow a somewhat different pattern, but the exceptionally large increases in 1950 and 1955 and the small increases in 1956 and 1957 stand out here also (see Otto Eckstein, "Inflation, the Wage-Price Spiral, and Economic Growth," in *The Relationship of Prices to Economic Stability and Growth* [Compendium of Papers Submitted by Panelists Appearing before the Joint Economic Committee, 1958], pp. 361–74).

11. I have included residential construction in gross investment because the gross rental value of houses (including owner-occupied) is included in the gross national product.

1958 was about as productive as the 1951–54 investment—i.e., that the output-capital ratio for these years was 25 per cent—and that the gains from this investment are realizable in 1959, the estimated capacity output for 1959 should be about $448 billion at 1954 prices. Since the GNP price index in late 1958 is approximately 10.6 per cent above 1954, this would give us a value of about $495 billion for 1959 valued at present prices.

Reasonable projections based upon probable growth of the labor force and change in output per worker lead to rather similar results. On the basis of the Census Bureau's recent projections of population, it appears that the non-institutional population in 1959 will be about 123.7 million.[12] Assuming a labor force participation rate of 57.6 per cent—about the same as in the last four years—and assuming that 2.6 million persons are in the armed forces during the next year, the estimated civilian labor force for 1959 is 69.75 million. If the unemployment rate is 4.4 per cent, the same as in 1955, this gives us a level of civilian employment of 66.7 million. Adding in the armed forces of 2.6 million gives total employment of 69.3 million. If this level of employment is achieved in 1959 and if output per employed person rises by 5.4 per cent as it did in 1955, we will achieve a GNP of about $449 billion at 1954 prices or $496 billion at present prices. It will be noted that this is almost exactly the same as the estimate based on the growth of capital, which also assumed implicitly the 1955 level of unemployment since that year was used as the basis of the projection.

If we should achieve an unemployment rate below the 1955 level of 4.4 per cent or if productivity should increase more rapidly than the 5.4 per cent increase of 1955, total output would, of course, be correspondingly higher. For example, if unemployment could be reduced to the 2.9 per cent level achieved in 1953 and if productivity should increase by 5.9 per cent as it did in 1950, we could reach a gross national product at present prices of about $506 billion in 1959.

Although precision is obviously impossible in projections of this kind, I do believe that there are reasons for thinking that a level of total output in the neighborhood of $490–$500 billion is not an unreasonable expectation for 1959 if we can generate sufficient demand to absorb this volume of output. My reasons for believing this are, to summarize, the large increases in productivity we have experienced

12. *Illustrative Projections of the Population of the United States, by Age and Sex 1960 to 1980* (Bureau of the Census, "Current Population Reports," Series P-25, No. 187 [November, 1958]), p. 16.

in prior years of recovery from recessions; the very large volume of capital investment in 1955, 1956, 1957, and 1958, which has not yet fructified in increases in output; the present relatively large volume of unemployment (5.9 per cent of the labor force on a seasonally adjusted basis in November); and the substantial increase in the labor force that can be expected next year.

Thus it appears to me that, insofar as the achievement of reasonably full utilization of capacity is concerned, the present situation calls for policies designed to increase aggregate demand rather than to restrict it. But what of the danger of inflation which worries so many people? Although it may seem paradoxical, I suggest that under present circumstances policies which encourage expansion may help to minimize inflation or at least may contribute very little additional fuel to it. It is interesting to note that the year 1955 when real output increased very sharply was not a year in which prices increased very much. On the basis of averages for the year, the consumer price index actually fell slightly between 1954 and 1955, while the wholesale price index rose less than 0.5 per cent and the implicit price deflator for GNP rose only 1.2 per cent. It is true that part of this relative stability in prices was due to the fact that farm prices fell—the implicit price deflator for farm GNP dropped by 6 per cent between 1954 and 1955. But the price level of all non-farm products —as measured by the implicit price deflator for the non-farm gross product—rose only 1.9 per cent. This compares with increases of 3.4 per cent in 1956 and 3.9 per cent in 1957 when productivity increases were much smaller.[13]

It appears that such inflation as there was in 1955 was due to rising demand and that it was not caused by increases in money wages in excess of productivity. Employment in non-agricultural establishments rose from 48.4 million in 1954 to 50.1 million in 1955, while non-farm gross product, valued at 1954 prices, rose from $329.0 billion to $357.2 billion. On this comprehensive basis, annual output per worker rose by 5 per cent between the two years. During the same period total compensation of non-farm employees rose from $207.6 billion to $223.9 billion, and annual compensation per employee rose by 4.3 per cent. That is, for the non-farm sector of the economy as a whole, wages rose considerably less than productivity

13. Some of the inflation we have experienced in the last few years is undoubtedly fictitious, resulting from a serious upward bias introduced into our price indices by failure to make proper allowance for improvements in quality of goods and services (see Richard Ruggles and Nancy D. Ruggles, "Prices, Costs, Demand, and Output in the United States, 1947–57," in *The Relationship of Prices to Economic Stability and Growth*, pp. 297–308).

in 1955. In 1956 and 1957, on the other hand, wage increases exceeded productivity increases by considerable margins.

On the basis of the 1955 experience, I suggest that if we succeed in getting large increases in output and productivity in 1959, the problem of cost-push from the wage side may not be serious. Moreover, if we follow excessively conservative policies with respect to demand, we may very well fail to realize the potential increase in productivity. If this is the case, the wage-push problem may be much more serious. Although our understanding of the causes of short-run changes in productivity is rather unsatisfactory, I believe an expansion of output will itself contribute to the increase in output per worker. In manufacturing industries during the recession of 1957–58 the reduction in production worker employment was relatively considerably larger than the reduction in total employment. It has been rather commonly pointed out that the recession produced drives to tighten up and increase efficiency in many companies. It seems likely that as production is increased, the increase in employment of supervisory personnel will be substantially less than in proportion to the increase in employment of production workers and the increase in physical output. Very likely, similar cases of decreasing real costs of production are to be found in many parts of the economy other than manufacturing and have much to do with the increase in labor productivity which seems to accompany the expansion of production.

Of course, it can scarcely be doubted that a rapid expansion in 1959 would be accompanied by some rise in the price level. However, this would be due to the rapid expansion of demand which would be necessary to achieve something like capacity output, and it seems at least a reasonable bet on the basis of past experience that the wage-push factor would be a less serious problem than it will be if we do not expand strongly. It may be noted that if a price rise in the neighborhood of 2 per cent is required to achieve the desired expansion, this will boost the required increase in monetary demand accordingly.

To summarize, I am suggesting that we are probably short of practicable full-capacity output for the year 1959 by something in the neighborhood of $40–$50 billion at current prices. The most optimistic forecast I have seen for 1959 is that we will achieve a GNP of $475 billion. If this should happen and be accompanied by a 2 per cent rise in prices (which would boost my estimate of capacity output to something like $500–$510 billion at the new prices), we may fall short of capacity output in 1959 by roughly $25–$35 billion

at 1959 prices or just slightly less at present prices. I believe this possibility should be borne in mind in the evaluation of our policies affecting aggregate demand.

IV. The Outlook for Monetary Policy

Federal Reserve policy has become noticeably more restrictive in the last three months. This is evidenced by changes that have occurred in free reserves—the difference between aggregate excess reserves and member-bank borrowings. The level of free reserves is an index of credit conditions to which the System seems to attach considerable importance. For most of 1958 up to September, free reserves varied between $400 and $600 million. In early September, the amount dropped below $100 million and with some variation has remained below that level since. On occasion for short periods, free reserves have become negative (i.e., there have been net borrowed reserves). The System has, it is true, increased its holdings of Treasury bills by approximately $1 billion since September. However, there has been a decline in gold stock of nearly $\frac{1}{2}$ billion, and a seasonal increase in currency in circulation has drained off a sizable amount of reserves. Thus, in a period of seasonal increase in credit demand, aggregate member-bank reserves have been held under tight control, with the result that the banks have reduced their excess reserves and increased their borrowings at the Federal Reserve. Short-term interest rates have risen rather steadily since midyear; the Treasury bill rate, which was below 1 per cent in July, is now close to 3 per cent, and other short-term open-market rates have increased accordingly. Federal Reserve discount rates at 2.5 per cent are nearly $\frac{1}{2}$ per cent below the bill rate; if the bill rate remains at its present level for very long or rises still higher, it seems certain that the discount rate will be raised, probably to 3 per cent.

Long-term interest rates fell quite sharply during the period of declining activity from the peaks reached in September and October, 1957, reaching their low points in April–June, 1958. Since that time they have risen steadily and sharply; by September they had reached levels comparable with the 1957 highs. Recently they have risen still higher. Thus long-term rates began to rise while short-term rates were still falling and while monetary policy as measured by the level of free reserves was still relativey easy. This paradoxical situation is explained partly by the speculative debacle that disorganized the market for Treasury securities in the middle of the year and by the fact that expectations of another round of inflation apparently be-

came widespread in financial circles as soon as some signs of recovery began to appear. Expectations of rising interest rates have made long-term bonds relatively unattractive and have thus kept down the supply of long-term funds. Some of the funds thus released have doubtless gone into the short-term market, thus restraining to some extent the rise in short-term rates. Thus, while long-term rates are in some cases above their 1957 peaks, short-term rates are still substantially lower than they were at that time. Fear of rising commodity prices has also quite obviously caused a shift of funds from the bond to the stock market, with the result that dividend price ratios have recently been below the yields on long-term Treasury bonds. Another factor contributing to high long-term yields is the continuing large volume of new offerings of bonds by corporations and state and local governments. Recent further increases in yields on Treasury bonds seem to be the result of a feeling in the market that the Treasury will attempt to tap the long-term market in connection with its projected January cash borrowing.

Thus we find ourselves in a relatively tight credit situation—at least according to recent standards—at a time when, if my estimates are even approximately correct, we still have a considerable distance to go to achieve full recovery. What lies ahead for monetary policy? There may well be some easing of credit conditions—or at least a slackening of the pace of restriction—in the early part of 1959 as a result of the usual seasonal decline in demand for credit, the paying-off of seasonal credits, and the return of currency to the banking system which normally follows the Christmas buying rush. However, if the Treasury should take advantage of such easing as tends to occur in January to offer a long-term bond, this move could serve to sustain the pressure. And, in general, unless either the economic outlook or the views of our monetary managers undergoes a change, I think we can expect a continuation and probable accentuation of the restrictive monetary policy of recent months. Evidence of this is to be found in the statement made by Chairman Martin a few days ago in which he evidenced great concern about the problem of inflation, indicating that in his view this is the major economic issue of the day, and recommending to the Administration that it take prompt measures to raise taxes or reduce government spending.[14] This statement certainly does not suggest any letup in the policy of restriction.

I believe that the fear of inflation that prevails in some quarters is much greater than is justified by a reasonable interpretation of the facts of the present situation, as indicated earlier in this paper. For

14. *Wall Street Journal*, December 15, 1958, p. 6.

this reason, I believe that a moderate increase in aggregate demand would be a good thing for the economy. Unfortunately, it seems to be rather difficult to accomplish such an increase in the immediate future by means of monetary policy. There is considerable—though perhaps not conclusive—evidence that most categories of income-generating expenditures are not very sensitive to such changes in interest rates and credit conditions as can be brought about promptly by moderate use of monetary policy.[15] In addition, recent studies suggest that the time lag between changes in credit conditions and such impact as they may have on expenditures is likely to be rather long—averaging perhaps a year or more.[16] Thus a reasonable readjustment of monetary policy might have relatively little direct effect on expenditures, and we might run some risk that such effects as it did have would be so long postponed as to occur when they would do more harm than good.

There are further problems which stem from the inflationary "set" that characterizes present expectations. Given these expectations, any dramatic easing of credit might be interpreted as presaging a dangerous spiral of prices. The result might be a prompt and exaggerated impact on financial markets—particularly on the stock market—the ultimate effects of which could be rather dangerous. The Federal Reserve was probably mistaken in permitting—even encouraging—credit to tighten as much as it has in the last few months. In particular, I believe it would have been desirable to keep long-term interest rates from rising as much as they have. Of course, with the weapons it is presently using, it would have been difficult for the System to prevent the rise in long-term rates without flooding the economy—particularly the banking system—with liquidity. Moderate purchases of long-term securities, properly timed, could surely have prevented long-term rates from rising so much. Moreover, long-term purchases could have been offset by short-term sales if the effect on bank reserves proved to be greater than was appropriate. But with the System operating only in bills, rather large purchases would probably have been necessary, and the effects would have been uncertain at best.

Under the present circumstances, I believe the monetary authori-

15. For a further discussion of this see Warren L. Smith, "Monetary Policy and the Structure of Markets," in *The Relationship of Prices to Economic Stability and Growth*, pp. 493–511.

16. See Milton Friedman, "The Supply of Money and Changes in Prices and Output," in *The Relationship of Prices to Economic Stability and Growth*, pp. 241–56; Thomas Mayer, "The Inflexibility of Monetary Policy," *Review of Economics and Statistics*, XL (November, 1958), 358–74; F. Gehrels and S. Wiggins, "Interest Rates and Fixed Investment," *American Economic Review*, XLVII (March, 1957), 79–92.

ties should proceed rather cautiously. A sharp and pronounced easing of credit would be rather risky. However, it would probably be desirable for the System to avoid further restriction until recovery has progressed further than it has to date. In fact, while I recognize the problem of lags, I believe a moderate easing of credit would be worth trying if it could be accomplished without setting off a burst of speculation. From a longer-run point of view, since a high rate of investment is vital to our growth and in the course of time makes a contribution to the fight against inflation by raising productivity, the wisdom of a policy which pushes interest rates to ever higher levels seems very doubtful. If interest rates continue their upward trend, they are certain to have an eventual impact on capital formation.

Recent experience indicates that changes in credit conditions can have rather strong effects on residential construction and mortgage credit, and I believe that this may create problems in the next few months. This area is quite sensitive to changes in long-term interest rates—although with a lag of several months—because of the existence of interest ceilings on FHA-insured and VA-guaranteed mortgages. When interest rates on alternative investments, such as corporate and state and local government securities, rise substantially above these rate ceilings, the supply of funds available for mortgage financing is diverted into the higher-yielding investments, and residential construction is starved for funds. However, one factor that may make this problem a little less serious than it was in 1956 and 1957 is the fact that VA-guaranteed mortgages are a somewhat less important factor now than they were at that time, while FHA-insured mortgages have assumed a more important role. The regulations of the Veterans Administration which prevent the builder from passing on mortgage discounts to the ultimate buyer of the property have made VA-guaranteed mortgages particularly vulnerable to tightening credit conditions. There is greater flexibility with respect to discounts on FHA-insured mortgages, and the increased importance of the FHA program may, therefore, have reduced the extreme sensitivity of residential construction to changes in long-term interest rates. Nevertheless, I believe that this is still the most credit-sensitive sector, and, while housing has been a relatively strong factor in the recovery so far, I fear that it may soon be adversely affected by the prevailing high interest rates.

Finally, it may be noted that the liquidity of the banking system is considerably less ample at the present time than it was in late 1954, the last time the Federal Reserve embarked upon a restrictive

policy. At that time the banking system possessed such large supplies of government securities that it was able to carry out a tremendous expansion of credit to the private sector by shifting the composition of its portfolios from government securities to loans. Because of these circumstances, the restrictive policy appears to have been very slow to exert appreciable effects on the supply of bank credit to the private sector. Although bank liquidity was increased substantially during the recent period of easy money and consequently a considerable amount of portfolio shifting may again be possible, I believe there is reason to expect that the banks and their borrowers will feel the credit pinch somewhat sooner this time if credit continues to be tightened.

CURRENT INTERNATIONAL MONETARY ISSUES

CUSHIONING THE IMPACT OF UNITED STATES ECONOMIC FLUCTUATIONS ON THE REST OF THE WORLD*

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THE UNITED STATES produces about two-fifths of the non-agricultural output of the Free World; United States foreign trade represents a larger fraction of the international trade of the world than does the trade of any other country; United States exports are essential to the functioning of several foreign economies; United States imports are the primary source of foreign exchange for several countries; the United States is an important source of short-term funds to finance international trade, it is the main source, directly and indirectly, of long-term funds for foreign investment, and it is practically the only source of out-and-out international financial aid. In short, the United States is a large factor in the world economy, and especially the Free World economy. Economic growth prospects for the world generally, and particularly for the Free World, indicate that the United States is likely to continue to occupy a similar prominent place for many years to come.

Political, military, and economic considerations combine to support the further point that most countries outside the Communist bloc will, with minor lapses, continue to be deeply involved economically with the United States, directly and indirectly, for a long time. We are the *"deus ex* their *machina economica"* which can help them realize their hopes for economic improvement and viable national political independence.

The United States economy fluctuates. There is every reason to believe that it will continue to fluctuate. Even relatively mild fluctuations in the United States economy are likely to have more than proportionately disturbing effects on foreign economies. Sharp fluctua-

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tions in some sectors of the United States economy are bound to have severe repercussions on other economies. Not all fluctuations in the United States economy are bad for all foreign economies, but it is an unusual economic squall that does not blow some bad along with some good. (Some people question the assumptions implied in this paragraph.)

Moreover, there is no basis for believing that United States policy is going to be (or should be) geared primarily toward the elimination of economic fluctuations. Changing technology, changing tastes, changing factor supplies, changing organizational arrangements, changing market structures, changing money supply, and changing saving and investment behavior—to mention some of the main categories—are going to generate fluctuations in the United States economy. Therefore, it is illusory to look to stabilization of that economy as the principal means of protecting foreign countries from United States economic fluctuations. This is not to say that measures to obtain growth in the United States economy *with* less instability are not possible or not desirable; it is simply to say that there is every prospect that there will be a residuum of instability, which, in the absence of effective measures, will have very disturbing effects on foreign countries.

United States concern for the effects of fluctuations on other countries may be expressed in political, military, economic, or humanitarian terms. All seem valid in the strategic context of the coming years. (I see here that I have unintentionally picked up the central theme of the current program of the American Economic Association —"The United States Economy in a World of Competitive Coexistence"!) There is a reciprocal concern on the part of the foreign countries for our economic well-being, since their national political existence, outside the Communist fold, and their prospects for fairly rapid economic improvement depend very much on their relations with us.

With the growing awareness of political and economic interdependence on the part of the countries of the Free World, the time is ripe for the development of measures and/or institutions that will increase the compatibility of the countries involved.

Let me now move directly into the problem of cushioning the foreign impact of United States fluctuations. We might ask first: What *can* the United States do? The answer is easy: The United States has the economic power to do a great deal, practically anything conceivable, to reduce or even eliminate the foreign impact of its economic

disturbances. This seems evident to me, in the light of the magnitudes involved, whether the fluctuation of concern to foreigners is that of expansion, with or without inflation, or of contraction, with or without deflation. The United States has the economic power, moreover, to do something to protect itself against fluctuations originating elsewhere.

The real issue is not, then, what *can* the United States do, but what *should* it do. This is separate, too, in the analytical and policy-forming stage, from what might be guessed to be politically feasible.

What the United States *should* do in this field follows to a considerable extent from one's theory of the process of international communication of economic disturbances. There is a strong tendency among informed people to see the problem in terms of the over-all balance-of-payments situation of particular countries. This approach may be narrowed down to primary concern with "International Reserves and Liquidity," to use the title of the recent study by the Staff of the International Monetary Fund. This study is full of facts and wise judgments, but it does represent, perhaps because of its institutional sponsorship, an inadequate approach to the problem of international economic instability. Of course, the international monetary mechanism must be kept intact—no mean job—but even success in this undertaking does not provide sufficient protection against the instabilities. This point is clear enough if one supposes that the international monetary mechanism functioned as efficiently as good domestic monetary systems: manifestly, the fluctuation problem still exists.

So, beyond the problem of establishing and maintaining a satisfactory international monetary system—fairly general convertibility of currencies and fairly stable exchange rates—are the problems of dislocations in particular industries, changes in capital movements, adaptability to externally induced changes, psychological reactions to changes in international economic position, and national anti-depression and anti-inflation measures. In my opinion, there is not yet sufficient detailed knowledge of the interactions of the various economies—or, stated differently, of the anatomy and physiology of the world economy—to provide the basis for an acceptable theory of the communication of fluctuations. It is tempting, but almost certainly incorrect, to transfer one's theory of domestic fluctuations to the international scene.

In the absence of an acceptable theory, based on thorough factual analysis, it seems to me that measures to cushion the international

impact of United States economic fluctuations should be based on the "shot-gun" rather than on the "rifle" approach. By this I mean, first, employing domestic stabilization policies which have stabilizing rather than destabilizing international effects and, second, employing foreign stabilization policies which affect directly *all* the main components of the balance of payments. The necessity for special foreign stabilization policies flows from the assumption that domestic policies are insufficient in themselves to deal with the international disturbances. This assumption seems generally correct because relatively small changes, in United States terms, are relatively large changes for most foreign countries and because the ability of most foreign countries to cope with these changes is quite limited.

It is obviously not the task of this paper to set forth domestic stabilization policies. Some "don'ts" from the international point of view, are worth noting, however. Don't rush for conversion of foreign assets, especially short-term deposits, into gold or other very hard currencies, since the likely result is a shock to national monetary systems and, of course, the delicate international monetary mechanism. Don't impose new barriers to trade, since the result is likely to be the perversion of the structure of production which is co-ordinate with future trade possibilities.

Now to the international measures themselves. These measures are of two general sorts, those having to do with finance and those having to do directly with trade in goods and services. Financial measures may be divided into short-term and long-term measures, or measures for liquidity, on the one hand, and measures for investment, on the other. Measures relating to exchange rates and gold are under the short-term or liquidity rating. Measures relating to trade may be divided into those having to do with durables and those having to do with perishables.

In this discussion let us think in terms of a developing depression situation rather than a developing boom and inflation in the United States. With respect to any measure, there are, of course, the problems of planning sufficiently in advance, the signals for action, coordination with other measures, the administering agency, etc. These problems are important and may be determining in some instances, but my remarks are directed mainly toward the basic policies.

Four basic types of policies are outlined here. They are viewed as complementary to each other. No priority is assigned them, in terms either of timing or of importance. They relate to (1) international monetary reserves, (2) long-term foreign investment and foreign aid,

(3) trade in durable goods, and (4) trade in perishables, including services.

1. International Monetary Reserves

On the supposition of a large actual or anticipated decline in dollar availabilities to foreigners, the first line of defense of the foreign countries is their own (net) holdings of gold, dollars and other fully convertible currencies. The Monetary Fund study demonstrates conclusively that the adequacy of reserves depends on a variety of factors. Whatever the size of reserves, there must be a willingness to use them if they are to have a buffer effect. The second line of defense is international short-term credit, especially that available from the International Monetary Fund. The Fund has at present only $1.3 billion of uncommitted resources, although it is asking its members for increased subscriptions. This second line of defense is grossly inadequate to meet a threat of any consequence. The United States aid programs and the generally high level of economic activity since 1946 have kept the Fund in a veritable state of "desuetude," innocuous, some would say, until the last couple of years. The Fund not only has very limited resources but has quite restrictive, though understandable, policies with respect to the use of its funds. It falls far short of serving the central banking function. The third line of defense with respect to monetary reserves, or international liquidity, is United States financial assistance. There are no stand-by arrangements of any consequence in existence, so executive and legislative action would be necessary to provide dollars from the United States.

The remedy for this situation is simple. Make more dollars available for use by foreign countries in case of a United States depression. They could actually be made available to some agency well in advance of need, or a firm promise could be made that they would be provided. The psychological effect would be greater if the money were actually appropriated and turned over to some agency. The agency could be a United States or international or foreign organization. The Treasury's Stabilization Fund could be revamped to provide this aid. The International Monetary Fund is the obvious candidate on the international front, although currency associations such as the European Payments Union could be used. The only foreign country that would seem to be a candidate to administer such dollar aid is Great Britain, since a backlog of dollars would allow sterling to be more generally convertible by removing the persistent concern about the sterling balances, still large after thirteen postwar years. These different channels are not inconsistent, but the dollars

might be put to better use by concentrating them in one place; experience with central banks leads one to the conclusion that that is preferable. This points to the Monetary Fund as the best agency, provided that the Fund was able to act to conserve the funds when they were not needed to meet an emergency, on the one hand, and that it would use them readily in case of need. Sterling could be strengthened by access to more dollars through the Fund just as well as directly. Other currencies could likewise be strengthened.

Of course, other countries should contribute something to their own increased protection in case of United States fluctuations. This can be most readily done through the International Monetary Fund. Their reserves outside the Fund would be more effective if shifted to the Fund. I shall not try to give an exact figure, but the United States quota might well be increased in the general dimension of $5–$10 billion. Further study would be required in order to suggest whether other countries should increase their quotas accordingly. It would not be difficult to work out a transfer of several billion dollars' worth of United States gold to the Fund which would have minimal disturbing effects on economic affairs in the United States and abroad but which would greatly enhance international liquidity in times of stress.

2. Long-Term Foreign Investment

Private foreign investment, whether equity or debt, is volatile, even more so than domestic private investment. With the general expansion in world production, international trade, and international investment that is occurring and which can be expected to continue under reasonably favorable conditions, the inevitable fluctuations in United States private investment abroad are bound to be large. For national economies with much less adaptability than the United States economy, rapid declines in our foreign investment can be very disturbing—even disastrous.

If such declines are to be counteracted, it seems necessary for the government to take measures which will assure the availability of funds to meet investment demands roughly approximating the predepression level. The main types of measures are apparently special inducements to private investors, government loans or direct investments, and government aid or gift programs. All types could be used. There would seem to be no reason why the resources for this purpose need be concentrated in one institution. An investment bank does not perform the same role as a central bank.

Most of the foreign investment funds for the Free World, in the

coming decade or so at least, are going to come directly or indirectly from the United States, unless drastic changes in output, in the propensity to consume, and in the propensity to invest abroad are in the making in foreign countries. The pressure for dollars for development projects is very strong, as the operations of the International Bank and the Export-Import Bank show, even when a large amount of gift or aid money has been available. It seems very unlikely, therefore, that an intergovernmental organization would be able to resist the pressure for full use of its investable resources at *all* times, which would mean that there would be no stand-by funds available when the need arose. In fact, an intergovernmental bank would tend to act cyclically rather than countercyclically, just like the rest of the financial community. This line of reasoning argues against the employment of the IBRD or a similar organization for this purpose. When more countries are in the position of foreign investors, an international countercyclical investment bank will have more plausibility.

Hence I am inclined to favor United States agencies as the principal reliance in this field. The main countercyclical lending or investing agency should probably be an "Emergency Foreign Investment Corporation," separate from the Export-Import Bank, at least in the formative stages. A United States agency in this field would not preclude, by any means, efforts to have the IBRD and other institutions act countercyclically, but it would be in a stronger position to withstand pressures to use its resources in relatively prosperous times and to use its resources more readily and with fewer limitations in depression. A United States development aid fund on a gift rather than on a loan or equity investment basis should not be set up in advance to offset declines in private foreign investments because of the disruptive effects it would have on the resumption of private investment. The arguments for it are unpersuasive if the emergency loan agency acts boldly.

As in the case of the short-term funds, it seems very desirable to have the agency established well in advance of the need for it and for the funds to be available long before there might be occasion to use them. When the funds are invested, they are likely to be tied up for many years; the fund would revolve very, very slowly. Hence there would have to be substantial original capital or quite firm arrangements for obtaining additional capital.

A countercyclical foreign investment fund should have available to it at least $5 billion; a $10 billion fund might actually have to be

used less, for it would provide assurance of adequacy which would help sustain private investment.

3. Trade in Durable Goods

With a decline in United States imports but with short-term funds available through the International Monetary Fund, if not otherwise, and with emergency international investment money available, foreign countries would be able to keep up their purchases from the United States if they so desired. But in the absence of a colossal foreign-trade multiplier, these dollar availabilities would not sustain United States demand for many types of foreign exports. Export industries in other countries could languish in the face of ample dollar exchange availabilities of a short-term or long-term character. Indeed, the demand for investment funds in foreign countries might well shrink substantially as a result of the multiplier effects of the drop in exports.

The direct approach to this problem is the purchase of foreign goods by the United States government. Obviously, for the specific purpose intended, the purchases should be made from the particular industries in the particular countries suffering the most acute declines. Since the problems of dealing with storable goods are so different from those involving perishables and services, the storable goods are considered first.

Much has been written, from various points of view, about commodity stabilization arrangements, especially for storable foods and raw materials. There has also been some experience in this field. I feel that there are potentialities for desirable results which have not yet been realized. The authors of the League of Nations volume, *Economic Stability in the Post-war World* (1945), and of the two United Nations pamphlets, *National and International Measures for Full Employment* (1950) and *Measures for International Economic Stability* (1951), share this estimate of the possibilities. The single-commodity approach to the problem, through intergovernmental commodity agreements, as spelled out in the draft charter of the International Trade Organization and still United States policy despite the non-existence of the ITO, is inadequate for the countercyclical task. Many commodities are necessarily involved. It seems impossible, however, to lay down precise rules governing stabilization operations in circumstances which are unpredictable. This is one reason I shy away from the rather intriguing proposals for a commodity-reserve currency; another is that money, now largely freed

from commodity links, is more likely to be well managed when the money-management task is not complicated by tricky, contingent obligations to maintain demand for certain commodities.

A United States government "Emergency Import-Export Agency," armed with sufficient funds and a broad directive to maintain United States demand for useful or resalable storable commodities, could go far to achieve the objective. No parity concepts should be employed. The goods acquired could be stored for resale or transferred to the military stockpile or put to other worthy uses. Support for some commodities might be achieved by guaranty arrangements or subsidy arrangements in the vein of the Food Stamp Plan, so that the imports would pass directly into private hands. Industrial, as well as mineral and agricultural, products could be eligible. The basic purpose of the agency would be to maintain United States demand at approximately predepression levels in order to maintain production in important export industries in other countries. This would be a powerful weapon for reducing the cumulative effects of a United States depression. It would reduce the demands on international monetary reserves and would tend to sustain the demand for United States investments in foreign countries. In the long run, the agency might even make a profit. Again the financial dimensions run in the $5–$10 billion range, under contemporary conditions and assuming depressions of much less severity and duration than that of the 1930's. Clearly, such a scheme could work, given sufficient financing, a broad directive, and a will to make it work. It is not a program for a timid government, however.

4. Perishables, Including Services

A decline in United States demand for perishable foreign goods and services can be just as disruptive to foreign economies as a decline in the demand for durables. The problems of maintaining the demand are much greater, however. If we think of the tourist traffic as the symbol of this type of balance-of-payments item, the difficulties become readily apparent. How sustain United States tourism abroad? Direct consumer loans for tourist purposes by the government and government guaranty of private loans (à la the Federal Housing Administration) are possibilities. Gifts or subsidies, usable only in this way, might be provided certain groups, for example, veterans, students, or the aged. The perishability of services sets severe limits on workable schemes. The multiplier effects would be worth something, however, even with direct subsidies. Just as with

the purchase of durable goods, action on this front would reduce demands for short-term funds and emergency investment financing.

To conclude: It is well within the power of the United States to establish arrangements which would practically eliminate the harmful effects on foreign nations of a sizable and sudden decline in United States economic activity. Aside from the obviously desirable domestic efforts to avoid or counteract such a decline, the measures which seem to hold the most promise are (1) a substantial increase in the resources of the International Monetary Fund, (2) a United States emergency foreign investment bank, (3) a United States multicommodity buffer-stock agency for foreign-produced storable goods, and (4) a loan, guaranty, and/or subsidy program to maintain United States demand for foreign perishables, primarily services.

These arrangements—established in advance of the need of them—would go far to remove fears of the consequences of a sizable United States depression. They would provide a major impetus to closer economic integration of the countries of the Free World. They would improve the prospects for steady economic growth. They would strengthen our political alliances. Finally, they would appear to be effective in accomplishing their purposes, whenever they had to be employed.

Since they would presumably be effective in maintaining production and trade and consumption at home and abroad, the real costs would be small compared with the real benefits. If these financial stand-by arrangements did not have to be employed, either because there was no need for them or because their existence made their use unnecessary—like a really effective military stablishment—the real costs would be extremely low.

This article has attempted to indicate what would be required for the purpose. It should not be construed as advocating this course of action.

MONETARY SYSTEMS FOR THE COMMON MARKET

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THE COMMON-MARKET countries will carry out their first round of tariff reductions on January 1, 1959, and will, according to the treaty, complete tariff removals within fourteen years. The economic interdependence of the member countries will in time be much like that of regions in the United States. One big question applying to such an area is what type of monetary system would best maintain payments equilibrium between its parts. Current prospects appear to be a continuation of EPU with a strengthened harmonization of monetary policy and a possible pooling of some of the members' hard-currency reserves. The ultimate objective favored by some is reportedly a unified monetary system which might be compared with the Federal Reserve.[1] It is this ultimate goal and its main alternative, rather than intermediate steps toward it, which are the subject of this paper.

A. COMPARISON OF SEPARATE CURRENCIES UNDER A GOLD STANDARD WITH A UNIFIED CURRENCY

Interregional transactions within a single country have much in common with international transactions under a gold standard. Regional currencies have a fixed parity with one another, just as national gold-standard currencies do. Current-account deficits for regions have largely the same effects on bank reserves and the money supply as those between countries. There may, however, be less leverage effect of reserve changes in a region of one country, because the district central bank may have plenty of government securities to liquidate and, therefore, need not reduce its deposit liabilities to member banks. Moreover, if commercial banks have branches over the whole country, any branch bank could run a deficit with the head office as long as the latter is willing to take over its earning assets or make advances to the branch. Private funds may move more easily in response to interest differentials within a country than between countries, although for normal periods of peace this point is doubt-

1. Two writers who comment favorably on the smoothness of adjustment within a currency area are J. E. Meade and T. Scitovszky. See J. E. Meade, "The Balance-of-Payments Problems of a European Free-Trade Area," *Economic Journal*, LXXII (September, 1957), 379–96; T. Scitovszky, "The Theory of the Balance of Payments and the Problems of a Common European Currency," *Kyklos*, X (1957), 18–44.

ful. National financial centers are well-developed markets with plenty of highly liquid securities; regional centers, like those of the United States, are much less able to attract outside funds. What they must do instead is to liquidate government securities or widely accepted private obligations in the national center. An inflow of funds from Paris to Frankfort might normally be easier to bring about than one from San Francisco to Kansas City.

The foregoing comparisons indicate only differences of degree between a unified currency system and separate national currencies under the gold standard. However, within a single *country*, roughly similar degrees of buoyancy, recession, or inflation are likely to apply. Much of this is due to the influence of the public budget, which creates or soaks up purchasing power in more or less the same degree in all parts of the country.

Are we to assume a common public budget, or at least parallel behavior of government budgets in discussing the EEC countries? To this writer, it seems more realistic to assume that something like the present degree of autonomy in domestic economic policy will remain. Quite possibly, one country might have a conservative and another a socialist government, with correspondingly distinct attitudes toward inflation or unemployment.[2]

B. Sources of Disequilibrium

Interregional trade (within a large country) can have disequilibrium for the same reasons as international trade. For a comparison of a unified currency with the alternative we shall consider further on, it is useful to distinguish between four sources of imbalance.

1. Structural changes may occur in the trading regions. Technological change may eliminate the locational advantages of a regional industry; the exhaustion of certain natural resources may operate in the same fashion; changes in final demand associated with newly developed products may well disturb the balance of trade; politically induced changes, such as the relaxation of East-West trade or an increase or decrease in military expenditures, would affect each mem-

2. Some may disagree with this prediction, in view of the provisions of the Common Market Treaty. Article 104 states that member states shall maintain balance-of-payments equilibrium while maintaining high employment and stable prices. Article 105 provides in a general way for co-ordination of economic policies between central banks and between administrative departments. Article 107 states that fixing and altering exchange rates shall be a matter of common interest. However, even if co-ordination is achieved to such an extent that employment and price instability are almost eliminated, or, alternatively, that the same mistakes are committed throughout the common market, there are other important causes of disequilibrium between countries than these. These are discussed below.

ber country's balance of trade. The first three of these causes would, other things being equal, induce some degree of depression in some regions and expansion in others; for the decline in exports or increase in imports at the expense of home production would have a downward multiplier effect on the output of one region and the opposite effect in another. The decline in output in the depressed region in turn causes a fall in imports which will be generally less than the fall of exports, so that a small deficit remains. If budget and monetary measures are used successfully against the fall of national income, the external deficit will be about equal to the fall in exports or initial rise in imports. But, generally speaking, there would be a tendency toward depression associated with an external deficit.

An appropriate domestic policy in this type of situation might be to rely on fiscal policy to stimulate output, while permitting or encouraging interest rates to rise in order to attract outside funds. Since capital funds may in future be quite mobile between financial centers in the EEC, such a procedure might work successfully for intermediate periods. But sooner or later something would have to be done to correct the fundamental imbalance.

Within the United States, chronic imbalances can be met by liquidation of government securities held by both the commercial banks and the district Federal Reserve banks. This makes up for the imperfect mobility of private funds but does not solve the problem of regional depression which may arise. Our system may operate smoothly in the financial sense but may not in the sense of preventing regional underutilization of resources.

Table 1 gives some evidence on the effectiveness of the United States monetary system in removing regional differences of unemployment. These may well be due to the types of structural shift described in the present section. The month selected for comparison had the advantage of being most nearly "normal" seasonally for the civilian labor force, total civilian employment, and agricultural employment.[3]

One may infer from the table that unemployment differences between states are sometimes marked, even when the states are contiguous, and that these differences are persistent. While there have been some remarkable movements of population in the United States, particularly to the Pacific Coast, mobility apparently cannot be counted on to remove pockets of unemployment in any reasonably

3. See *Current Population Reports, Labor Force,* "Seasonal Variations in the Labor Force, Employment, and Unemployment" (Bureau of the Census, Series P-50, No. 82 [April, 1958]).

short time. Mobility between countries of the common market can be expected to be less than in the United States, perhaps much less.

2. Different regions joined in a single market may have differing rates of full-employment income growth. Such differences may be due to neutral technological advance, development of new resources, a higher rate of equilibrium saving, or a higher rate of growth in the labor force, in a particular region. Assuming equal income elasticities of import demand for all members of the market and stable price levels, the faster-growing region develops a growing deficit.[4]

TABLE 1*

INSURED UNEMPLOYMENT AS PERCENTAGE OF AVERAGE MONTHLY COVERED EMPLOYMENT FOR SELECTED STATES IN NOVEMBER, 1950–58

	Average	1950	1951	1952	1953	1954	1955	1956	1957	1958
States of higher than average unemployment:										
Kentucky	5.1	3.4	3.8	3.6	5.2	8.3	4.5	5.3	6.3	5.7
Maine	5.3	6.4	5.1	3.3	5.7	6.1	4.1	3.3	6.9	6.7
Mississippi	3.9	2.9	3.5	3.2	4.4	5.5	2.7	3.8	5.1	4.3
New Hampshire	4.8	5.3	7.0	3.5	6.7	6.3	3.6	3.5	3.8	3.8
Tennessee	5.0	3.4	5.0	3.3	5.1	7.2	4.7	5.1	5.7	5.2
West Virginia	3.9	2.6	2.2	3.1	4.0	7.9	2.6	2.3	4.1	6.8
National average	3.0	2.7	2.7	1.9	3.1	4.1	2.2	2.4	3.6	4.2
States of lower than average unemployment:										
Colorado	1.1	1.0	.4	.3	1.3	1.4	0.8	1.1	1.7	2.0
Iowa	1.2	.8	.7	.6	1.6	1.5	1.0	1.4	1.5	1.4
Ohio	2.0	1.6	1.6	.9	2.0	3.2	1.2	1.4	2.9	3.3
Texas	1.4	.9	.7	.7	1.3	1.7	1.1	1.4	1.9	2.6
Utah	1.6	1.4	1.1	.9	1.6	2.3	1.4	1.6	2.2	2.2
Wisconsin	2.3	1.1	1.7	.8	3.0	3.2	1.6	2.7	2.8	3.4

* Source: *The Labor Market and Unemployment Security* (Washington: United States Department of Labor). Data are from monthly issues over about 9 years.

Is there any tendency for the movement of private capital to offset the deficits of the more rapidly growing region? This would be

4. If the technological advances or resource developments are sufficiently import-saving or export-increasing, the faster-growing country may not incur a deficit. I would prefer to place such changes under the structural heading, while the output growth associated with the change would come under the present heading. Clearly, almost any structural change would be associated with either an increase or a reduction in national real output. I am indebted to J. M. Letiche for comments on this point. The matter of output growth, technological change, price levels, and balance-of-trade effects has been dealt with by J. R. Hicks, "An Inaugural Lecture," *Oxford Economic Papers*, N.S., Vol. V, No. 2 (June, 1953); H. Johnson, "Increasing Productivity, Income Price Trends, and the Trade Balance," *Economic Journal*, LXIV (September, 1954), 462–85; J. M. Letiche, "Differential Rates of Productivity Growth and International Imbalance," *Quarterly Journal of Economics*, LXIX (1955), 371–401.

true if the rate of return on capital were also higher in such a region. But there is no unique connection between rate of return on capital and the rate of output growth. To be sure, given the growth in labor force, the rate of technological advance, the availability of natural resources, *and* the rate of saving, a high rate of return on capital would mean a large addition to output per unit of investment. At the same time, it implies a low rate of return for additional units of other factors. In general, a rapidly advancing country or region could just as well have a low rate of interest as a high one. With complete mobility of capital, an actual gap in interest rates between regions would be prevented by the flow of capital, but the flow would be induced by the tendency toward differences in interest levels. No automatic tendency is present for capital inflows to balance current-account deficits of rapidly growing areas; net capital outflows may just as well be present. Such capital movements, while fully consistent with optimal factor allocation between regions, would, of course, increase the embarrassment of the deficit region. Thus we can conclude that neither the unified currency area nor a gold-standard system has any automatic mechanism for restoring equilibrium between regions of different growth rates.

3. Like the previous case in its working, but differing as to its cause, is the situation of output instability in some countries. This may, in the future, be a less serious cause of disturbance in trade and payments than in the past, but it is likely to occur in some degree despite anticyclical policies of governments.

4. The traditional disequilibrium case is one due to price levels getting out of line. This might happen even with harmonized monetary policies, because underlying conditions are more buoyant in one region than in the others and these are not compensated for by appropriate differences in fiscal policy or because pressure for wage increases is higher in one region than in others. Once price levels have moved apart, it is very difficult to align them again, and so a persistent imbalance develops, for which the unified currency system offers no solution.

A unified monetary system, like a gold-standard system, thus turns out to have serious shortcomings. It differs from the latter in that a reserve loss may have much less leverage effect on the money supply and that private capital may flow more easily. But it offers the same solution for an imbalance, namely, a multiplier adjustment augmented by monetary pressures.

C. A Variable Rate System

The alternative to a unified currency to be considered here is a system in which countries may co-operate in financial and other economic matters but make use of exchange-rate adjustments against the four types of disequilibrium discussed above. The points to be discussed briefly in this connection are (1) the effect of variable rates on both investment and short-term capital flows; (2) some new empirical evidence on the magnitude of price elasticities of demand for a country's exports; (3) the conflict which exists between domestic and foreign equilibrium even when rate changes adjust the balance of trade immediately; and (4) the problem of maintaining triangular balance, which is separate from that of keeping over-all trade equilibrium.

1. *Variable rates and capital flows.*—The impression created by disturbing speculative capital movements in the interwar period is still strong.[5] However, in recent years the view has gained ground that speculative flows of funds may well operate to stabilize rates rather than to destabilize them. If fairly strong expectations are present that a rate tends toward some parity (which may change gradually over time), speculation will prevent wide movements from that parity. Evidence has been presented recently by William Gardner that this is the case for fund movements between the United States and Canada.[6]

When employment and price levels in trading countries remain stable over longer periods, disturbances to trade are likely to be moderate and gradual. In such cases, the expectations of speculators are likely to facilitate, rather than to upset, the finding of new equilibrium parities when these become necessary. When internal economic and political conditions are disturbed, as they were in most countries during the 1930's, the flight of funds from one financial center to another is likely to be troublesome, no matter what system of exchange rates prevails.[7]

A related comment can be made on the flow of long-term investment funds. It is sometimes maintained that the expectation of rate changes in the future introduces an additional risk to foreign invest-

5. See *International Currency Experience* (Geneva: League of Nations, 1944), chap. v.

6. W. R. Gardner, "The Canadian Dollar, 1950–1956: A Case Study of Exchange-Rate Stability in a Free Market" (unpublished doctoral dissertation, Indiana University, 1959).

7. See also the comments of M. Friedman in "The Case for Flexible Exchange Rates," in his *Essays in Positive Economics* (Chicago: University of Chicago Press, 1953), pp. 175–77.

ment and therefore reduces it below the desirable volume.[8] However, the alternative to rate adjustment is likely to be a greater degree of domestic instability or a greater use of direct controls on trade and payments, because recurrent disturbances to external balance are probable. It is therefore difficult to say whether the added risk due to rate uncertainty is greater than the other risks which may be present when rates are held fixed in the face of underlying changes.

2. *Some empirical evidence on ease of price adjustment.*—The effectiveness of rate variations as a device to maintain the desired deficit or surplus within the market for a member, as well as over-all equilibrium for the same country, will clearly be greater, the greater are international demand elasticities. By the same token, fixed rates are the more difficult to maintain with high elasticities, when price levels move out of line. Favoring adjustments within the market are (*a*) the economic similarity of its members—all are industrial countries; (*b*) their geographic proximity—transportation costs between them are low; (*c*) the fact that it is a multicountry and not a two-country market—so that each country supplies only a fraction of another country's imports.

Some indirect light is thrown on the importance of the third point by some price-elasticity computations I have made for United States demand for imports from individual countries. This has application to the intra-European problem, because each is a case of a number of countries supplying the same market in competition with one another.

These computations were made with the data in the study by Adler, Schlesinger, and Van Westerborg on United States imports.[9] The series given there extend from 1923 to 1950, of which I omitted the years 1930–34, because of the overriding effects of the depression, and the war and postwar years 1940–47. The multiple regression computations included United States gross national product at current prices, an index of general import prices, and a price index for total imports from the particular country. The countries concerned were the United Kingdom, France, Switzerland, the Netherlands, and Belgium. The first three gave high multiple correlations, the Netherlands a fairly good one, and Belgium a weak one. The two price variables were good explainers in all the five countries; GNP

8. This view is advanced by T. Scitovszky in "Economies of Scale, Competition, and European Integration," *American Economic Review*, XLVI (1956), 71–91.

9. J. H. Adler, E. R. Schlesinger, and E. van Westerborg, *The Pattern of United States Import Trade since 1923* (New York, 1952). The authors give demand elasticities for finished manufactures from the United Kingdom and Switzerland, which are quite high for the former, but very low for the latter.

was good only in the case of Switzerland. The calculated price elasticities of demand were, respectively, United Kingdom, —1.8; France, —0.9; Switzerland, —1.7; Netherlands, —1.6; Belgium, —1.4. The significance levels applying to the price coefficients were, respectively, 1 per cent, not quite 5 per cent, 1 per cent, not quite 1 per cent. and 1 per cent. An equation using the United States wholesale price index as a fourth variable did not give a much better fit, and the wholesale price variable turned out to be statistically insignificant. A similar equation for United States over-all import demand gave a very poor fit. The same calculations, *including* the years 1930–34 were notably less successful.

In view of the known downward bias of multiple correlation estimates of price response, these results are encouraging for the view put forward here. They are one more addition to the recent empirical evidence which tends to contradict the elasticity pessimists.[10]

3. *The conflict between external and internal balance.*—Exchange-rate adjustments will probably greatly ease the problem of maintaining external and domestic stability against disturbances of the four types discussed above. However, rate adjustments will not generally insulate the level of domestic activity while correcting an external imbalance. Only in the fourth case above, where price levels have moved out of line, will this be the case. For here the rate correction will restore the terms of trade to their original position and leave the volume and balance of trade and real income in each country at their original levels. Only the units of measurement have changed.

When one of the first three sources of disturbance is at work, this is no longer true.[11] Structural trade shifts, cyclical income fluctuations, and differences in rate of growth all create different situations. Suppose, for example, that a country enjoys an increase in the demand for its exports, owing to some innovation, to a change in outside trade barriers, to a change in the structures of other economies,

10. See in particular the study by G. D. A. MacDougall, "British and American Exports: A Study Suggested by the Theory of Comparative Costs," *Economic Journal,* XLI (December, 1951), 697–724, and XLII (September, 1952), 487–521; and A. C. Harberger, "Some Evidence on the International Price Mechanism," *Journal of Political Economy,* LXV (December, 1957), 506–21.

11. Laursen and Metzler have dealt with the problem of the following paragraphs and come to similar conclusions but for the wrong reason. They base their findings on the assumption that the average propensity to save will rise with rising real income. This is unnecessary; it is only necessary for the marginal propensity to spend to be less than 1. The average savings propensity could even fall with rising income without reversing the conclusions (see L. Laursen and L. Metzler, "Flexible Exchange Rates and the Theory of Employment," *Review of Economic Statistics,* XXXII, No. 4 [November, 1950]).

or to a rise in foreign real income. Assume that the level of output remains initially the same in this country.

Exports will rise, and there will be a tendency for imports to rise with the multiplier-induced rise in income. But, in order to prevent a trade surplus, an appreciation of the terms of trade is necessary. Paradoxically, the net effect on employment of rising foreign demand and the terms-of-trade increase used to compensate for it will be *downward*. This is necessarily true, so long as the marginal propensity to spend (a, which is the sum of marginal propensities to consume and to invest) is less than 1. In fact, the multiplier will be exactly equal to 1, for any $0 < a < 1$, and for any terms-of-trade adjustment which keeps trade in balance.

The reason for this is that the initial rise in real income is the rise of the terms of trade *times* the volume of exports (or imports); the gap of demand created by the rise of real income is $(1 - a)$ *times* the income rise; and the multiplier associated with the gap is $1/(1 - a)$. The multiplier contains no foreign leakage term in the denominator because trade is continuously held in balance, from our assumption that terms-of-trade adjustments are used to this end. Thus any change in imports is matched by a corresponding change in exports, and the two cancel in their effect. But $(1 - a)$ times $[1/(1 - a)]$ is always 1, giving us the unit multiplier, applied to the initial real-income change.

By exactly the same argument, a cyclical decline in foreign income leads to a terms-of-trade reduction and to a unit multiplier effect, this time in the *upward* direction.

The conclusion, briefly, is that repercussions on domestic employment and output can be reduced, but they cannot generally be eliminated, by using the exchange-rate device.

4. *The problem of triangular balance.*—The problem of multilateral balance may not be nearly so tractable as that of adjusting balances within the common market. World trade, in the future as in the past, will not balance directly between major regions any more than it will between single countries. Europe probably will cover its dollar deficits with surpluses against the Middle East, Southeast Asia, Africa, and Latin America. Appropriate exchange rates may put Europe into over-all balance without much difficulty. They may not equilibrate the trade of these other areas; for they include countries with frequent or chronic financial difficulties, which are unreliable suppliers of dollars. The possibility of links breaking in the settlement chain means that other devices than exchange rates would

at times be called for to deal with the difficulty. Sufficiently great reductions in rates may well succeed in creating direct balance with the dollar area, but at the cost of undesirably low terms of trade. The least costly alternative to this would be regional discrimination against dollars whenever they become scarce through a disturbance in third areas. This in turn implies that discriminatory restrictions and multilateral clearing systems like the proposed successor to EPU have a part to play, which will, let us hope, become infrequent.

D. Conclusions

1. A unified currency system has little new to offer in adjusting external balances that a gold-standard system does not have. Consequently, it would have the same difficulties as the latter in coping with continued changes in the internal structures of trading countries, with differences between them in rates of output change and with price-level disparities.

2. Variable rates, while having obvious advantages, do not avoid all difficulties of external adjustment, even if price responses are likely to be high. They will not simultaneously keep external balance and insulate the domestic economy.

3. Whether or not rate flexibility is used in the common market, a multilateral clearing system and other devices for discrimination should be held in reserve. Imbalances in multilateral settlement may recur, for which rate adjustments may be too expensive a remedy and for which discriminatory restrictions would be more appropriate.

DISCUSSION

WILLIAM A. SALANT:* Mr. Coppock has earned our gratitude by his fresh and stimulating discussion. It seems to me, however, that his paper bears a strong flavor of the past, of, say, the period of the late 1940's. At that time, the world was suffering from a widespread dollar shortage which appeared to many to be chronic. There was strong reason, based on studies of the interwar period, to believe that imports were particularly sensitive to economic fluctuations in the United States. In that setting, it did indeed appear that recession in this country would be disastrous to the rest of the world. These apprehensions seemed to be confirmed when the mild recession of 1949 led to, or at least coincided with, the devaluation of sterling and many other currencies. The general view was summed up in the aphorism that "when the United States sneezes, the rest of the world catches pneumonia." Mr. Coppock has happily spared us that now hackneyed formula, but his paper indorses the thought.

The world has changed greatly since 1949, however, and I should like to call attention to two of the changes that seem most relevant to Mr. Coppock's discussion of international reserves. In the first place, we have seen a pronounced shift in the distribution of the world's monetary reserves. At the end of 1949 the United States held about three-fourths of the world's monetary gold reserves, some $24\frac{1}{2}$ billion out of $33 billion. Even if we add to foreign holdings the $3 billion dollar balances held by foreign monetary authorities, the United States share is reduced only to two-thirds of the total. By late 1958, foreign gold and dollar reserves rose from $11\frac{1}{2}$ billion to $26 billion, while United States holdings had dropped by $4 billion. The United States at that time held slightly more than half the world total of gold alone, or 45 per cent of the combined gold and dollar reserves. This greatly altered distribution of international reserves in turn results from a shift in the balance of payments of the United States with the rest of the world from large-scale surplus to fairly steady deficit.

The second development is that, since 1949, we have had the experience of two further recessions in the United States.[1] The United

* Huntington, New York.

1. In view of the widespread concern about the possibility of inflation, it should be noted that Mr. Coppock has confined his discussion to measures designed to cushion the international impact of American recessions. The international impact of inflation raises a quite different series of problems calling for different solutions.

States has sneezed twice, and the rest of the world, taking it as a whole, has not caught pneumonia, in fact, it has hardly even suffered a sympathetic sneeze. During the 1953–54 recession, the supply of dollars available to the rest of the world remained almost steady as a rise in private capital exports from the United States filled most of the gap created by a modest decline in imports and foreign-aid disbursements. As a result, foreign countries were able to add $1½ billion to their gold and dollar reserves in the year ending September, 1954. It is true, however, that they were gaining at a slightly higher rate in the previous year, so that there was a substantial cushion to fall back upon. Many observers feared that serious difficulties might develop if no such cushion was present when the next recession occurred.

These fears were put to the test in 1957. Prior to the downturn, the United States was in surplus with the rest of the world. Yet the recession coincided with a shift in the payments position so sharp that, in the following year, the reserves of the rest of the world actually rose by $3 billion, as a small decline in United States imports was far more than offset by a sharp drop in exports.

Thus the supply of dollars available to the rest of the world has been fairly well maintained in two recessions. This does not mean that individual countries have been free of balance-of-payments difficulties in recent years. In some cases, such difficulties were due to special circumstances, such as the aftermath of the Suez crisis. A more serious problem is that many, if not most, of the raw-material–exporting countries have had payments difficulties in the last two years. Insofar as these troubles are due to declining exports, however, it would be wrong to blame them exclusively, or even mainly, on recession in the United States. Industrial activity has receded, or at least paused, in most western European countries, and exports of the raw-material–producing countries to western Europe have declined far more, both relatively and absolutely, than their exports to the United States. (Between the first half of 1957 and the first half of 1958, western European imports from countries exporting primarily raw materials, other than petroleum, declined from $16 billion to $14.5 billion—annual rates; in the same period, United States imports from the same group of countries declined from $5.2 billion to $4.9 billion—annual rates.) Individual country problems have been partly met by a burst of activity on the part of the International Monetary Fund; Mr. Coppock's reference to the Fund's inactivity cannot apply to the period since September, 1956.

It would be tempting to conclude from the history of the last five years that future recessions in the United States are not a potential danger to the rest of the world—tempting, but rash. Although our recessions need not inevitably have serious foreign repercussions, it is still quite possible that they may. Nor can it be concluded that the improved distribution of international reserves has by itself solved the reserve problem; it has only altered its character. The present distribution of reserves is not ideal, and the total is inadequate. We can, however, draw the following conclusions from recent experience:

1. An increase in international liquidity is highly desirable, but it is needed to meet other needs at least as much as to meet those arising from future recession in the United States; therefore, it should not be reserved for the latter purpose.

2. In view of the present distribution of reserves, the present pattern of international payments, and, one may add, recent discussion of the international position of the dollar itself, any accretion to the pool of international liquidity should be provided by multilateral action, not by a massive and largely unilateral contribution by the United States, such as Mr. Coppock suggests.

These conditions would be met by an all-round increase in quotas in the International Monetary Fund. The action now being taken to raise quotas by 50 per cent, which Mr. Coppock did not mention, may not be of the magnitude he considers necessary, but it is certainly a step in the right direction.

GEORGE KLEINER:* We all share with Professor Coppock his concern for the ability of foreign countries to cushion their economies against the impact of United States fluctuations. The memory of the 1930's remains remarkably vivid; and each of the three postwar recessions has, at least at its inception, revived the fear that it would drag down the rest of the world to low levels of output, let alone decrease the aggregate of world trade. So far, the effects have not been nearly so catastrophic as had been feared. This has been in part due to the fact that the recessions in the United States have been short-lived, thus far, and that, although the decline in durable-goods output (both producers' and consumers') has been quite sharp, disposable income and consumer expenditures have declined very little. In part, also, discrimination against the United States in the face of declining exports and/or export prices helped to localize the decline in world trade and output. In 1929–33, in contrast, the reaction to

* University of Illinois.

dwindling dollar sales was to apply severely deflationary policies and thus reinforce the primary contraction in income and trade that had initiated the downturn. To the extent that the major trading countries reduce or remove quantitative restrictions and other discriminatory devices, this may again become a more serious problem in the future.

But perhaps more important than these considerations, for the problem at hand, have been the differences in international impact among the postwar recessions. The decline in the volume of imports was smaller in 1949 than in 1953–54, but the decline in value was greater, due to the sharper decline in prices in 1949. In 1949 foreign reserves of gold and dollars were at a low ebb because of their using-up in the immediate postwar years; and the anticipation of devaluation led to a movement of short-term capital to the United States, thus further reducing reserves, at least temporarily. In 1953–54, reserves had gone through a period of increase, and relative interest-rate movements were such as to cause short-term capital to flow out of the United States. The 1953–54 recession in the United States also coincided with a sharp revival in Europe after the textile slump of 1952, so that over-all demand for raw materials and foodstuffs remained fairly firm. In contrast, in the 1957–58 recession in the United States, the reduction in imports has thus far been relatively small, far smaller than the reduction in exports. What has hurt the non-industrialized countries much more than the decline in sales to the United States has been the decline in sales to Europe. Europe's imports from outside Europe in 1956 were about twice United States imports, and Europe's imports flattened out as early as the first quarter of 1957 and began to decline in the third quarter.

There are a few generalizations, I believe, that can safely be made about the three postwar recessions that can serve as useful guides to future policy. One is that the impact of the United States on the rest of the world and particularly on the non-industrialized countries must be viewed in relation to the impact of Europe. To the extent that Europe may prove to be more successful than the United States in maintaining a high and reasonably steady rate of growth, recessions in the United States will slow down growth of output and trade in the rest of the world but will not produce the sharp world-wide downswings we all fear. Also, any anticyclical policies that are undertaken should be undertaken jointly with Europe. Europe's economic fluctuations may remain more moderate for awhile than those of the United States; but the import base from which Europe starts

is much larger, so that the impact on the rest of the world of even moderate declines in activity could easily be as large as the impact of United States recessions.

A second generalization, already stressed by Professor Coppock, is that reserves or international liquidity should be large enough to enable both Europe and the non-industrialized countries to maintain high growth rates without fear of exhausting their means of international payment. This consideration becomes increasingly important as discriminatory controls are dismantled. Expansion of the International Monetary Fund is therefore an appropriate policy. But I believe that too little consideration has been given, by economists in the United States, to the question of an increase in the price of gold as a means of expanding international liquidity. Some of the negative aspects of this policy have been stressed, namely, that it would increase the competitive power of the Communist bloc and also that it would increase the value of existing reserves or new gold output and hence purchasing power in foreign trade without regard to need, so that there is the probability that some portion of the increase would leak away into liquidity hordes. But there are positive aspects that deserve more consideration. To the extent that discriminatory controls are dismantled, access to a central pool of loanable funds may not be sufficient to induce the requisite antirecession policies on the part of some of the major trading nations, since such a pool works efficiently as an anticyclical device only if repayments are reasonably rapid; and many countries may be reluctant to increase such commitments in the face of recurring four-year downturns.

One other aspect that I would like to touch on briefly is the relations between non-industrialized and industrialized countries. Since, as the output of the industrialized countries grows, consumption of foodstuffs and raw materials does not keep pace with the growth in output or income, a very high rate of growth is necessary in the industrialized countries to prevent a worsening of the terms of trade for the primary-producing countries. This tendency for the prices of primary products to fall relative to manufactures can also be lessened, of course, by industrialization in the underdeveloped countries, which would both add to world demand for primary products and reduce the pressure of increasing population and labor force on the supply side. But to the extent that development of the underdeveloped countries takes the form of applying some of the techniques presently used in the developed countries to the production

of primary products, particularly foodstuffs, the worsening in their terms of trade will be increased.

This may at first appear to be a long-term problem and therefore inappropriate to bring up in a discussion concerning short-run fluctuations. But weakness in primary-products markets is an important factor in precipitating short-run declines, both because of adverse price anticipations and therefore inventory policy and because it reduces the volume of exports of the industrialized countries, thus contributing to a slow-down in their growth. Something of this has been at play in the last two or three years. Since early 1957, Europe's gold and dollar reserves have increased largely because of the decline in their import prices relative to their export prices. But their exports have also decreased, though after some lag, and constitute an important contributing factor to the current stagnation.

An increase in owned reserves, not merely an increase in access to loanable short-term capital, as through the International Monetary Fund, would help considerably in enabling European countries to undertake renewed growth investment without the fear of the balance-of-payments disequilibrium that almost inevitably will result from such capital gestation. An increase in the price of gold is worth considering as a means of achieving this objective. This, together with long-term loans to the underdeveloped countries, would avoid some of the rigidities of specific commodity-support programs and at the same time help to reallocate resources in the non-industrialized countries. In other words, a high rate of growth in the industrialized countries, made possible in part through the provision of increased reserves, together with continuing development in the underdeveloped countries through long-term lending, would go far toward alleviating the distress and the cumulative nature of periodic slowdowns or downturns in the United States.

WENDELL GORDON:* Professor Coppock has read a thoughtful paper.

The International Monetary Fund has only $1.3 billion of uncommitted resources. This is grossly inadequate to meet a threat of any consequence.

Long-term private foreign investments are bound to fluctuate largely and are not therefore a reliable tool.

A United States government "Emergency Import Agency" could help. The basic purpose of the agency would be to maintain United

* University of Texas.

States demand at approximately predepression levels in order to maintain production in important export industries in other countries. This could be a powerful weapon for reducing the cumulative effects of a United States depression.

These are worthwhile comments. They indicate a tolerant desire that the United States should follow a constructive policy in the world. Whether the United States Congress is prepared to implement such policies is by no means certain. I personally think serious effort should be made to convince Congress. It does not help matters in dealing with these problems for economists to abstain from pressing vigorously for worthwhile policies merely because of the prejudgment that there will be political difficulties.

BUSINESS PROCEEDINGS, AMERICAN FINANCE ASSOCIATION

MINUTES OF THE MEETING OF THE BOARD OF DIRECTORS DECEMBER 27, 1958

Palmer House, Chicago, Illinois

This meeting was convened at 8:10 P.M. by President Chandler. Others present were Mrs. Daniel and Messrs. Van Arsdell, Walker, Cox, O'Leary, Secretary-Treasurer Hassett, and Editor Segall.

A motion to dispense with the reading of the minutes of the previous meeting was approved. New members were accepted in accordance with the Secretary-Treasurer's list.

The Secretary-Treasurer distributed and reviewed his report. He indicated that a small surplus had been achieved and that membership was increasing slowly. President Chandler announced that the 1957 report of the Secretary-Treasurer had been audited and found to be in order.

The Editor distributed the report of the editors. He indicated that the number of manuscripts submitted had increased substantially over previous years and that the distribution of articles among the several divisions was improving but was still far from ideal. There was some discussion concerning the possibility of obtaining additional manuscripts in the more sparsely represented divisions.

The report of the Advertising Manager Erich Otto was read by the Editor. This report indicated that advertising revenues had decreased during the year in line with retrenchments by business firms. It appears, however, that advertising revenues may be better during 1959.

All reports were accepted as presented.

Ben Sutton, chairman for student affiliates, reported that, because he had been on leave during the past year, he had been unable to follow student activities as aggressively as he had earlier. However, he would have more time for this activity with his return to full-time teaching.

Ernst Dauer, who was asked to be present to report on institutional memberships, indicated that, because of the pressure of other duties, he had had little opportunity to do much on promotion of institutional membership. He expects shortly to have more time to devote to institutional interests. The Directors approved motions to thank both Sutton and Dauer for their work.

The budget for 1958–59 was submitted. It shows a small budgeted increase in income and some increases in expenses. The principal increase in expense is the provision for publishing the Directory. The budget indicates a planned net surplus of about $300.00. After discussing the availability of funds, the Directors approved the printing of the Directory.

Discussion was directed to the feasibility of a change in the sequence by which the several subject disciplines are represented on the annual program. The present order of alternation was said to concentrate the more popular fields in the even-numbered years rather than balance them with the less popular fields year by year.

The question was left for reference to the incoming President with the suggestion that he appoint a committee to consider it.

There being no further business, the Directors' meeting adjourned at 11:40 P.M.

MINUTES OF THE ANNUAL MEMBERSHIP MEETING DECEMBER 28, 1958

The meeting was brought to order at 4:30 P.M. by President Chandler. About 65 members, capacity for the meeting room, were present. (It is noted that we should request a larger room for future business meetings.)

A motion that the reading of the minutes of the last annual meeting be dispensed with was approved, these minutes having been sent out to the members.

The Secretary-Treasurer's report was distributed. He pointed out that finances were in good shape, noted that membership was slowly increasing, and encouraged all members to support the Association by bringing in new members. The report was approved unanimously.

Editor Segall distributed the report of the editors and pointed out that additional articles were desired, especially in certain areas. The Editor's report was approved unanimously as submitted.

The Advertising Manager's report was presented by the Editor. This report pointed out that advertising receipts had declined but that it was expected that advertising revenues in 1959 would show an improvement.

The chairman of student affiliates, Professor Sutton, reported that there were 26 student chapters, that 3 more chapters had been added during the last year, and that 2 chapters were pending. He suggested that we try to achieve greater co-operation between the advisers of the student affiliates and the Association.

Professor Francis Calkins, Marquette University, reported that there had been a very successful Midwest Area American Finance Association meeting in April, 1958, with the American Economic Association and outlined briefly the plan for the joint meeting to be held in April, 1959, at St. Louis.

President Chandler reported that the local group in New York City had had a very successful dinner meeting on November 14, 1958. Mr. Per Jacobsson was the principal speaker.

A resolution was introduced from the floor to thank the general chairmen for the effective organization of the annual meeting and to thank the local arrangements personnel for their fine performance. In addition, resolutions were presented to thank the officers and directors for their services during the year. A further resolution was introduced to express appreciation to Harold Fraine, the retiring Editor, and Joel Segall, who assumed the editorship. All resolutions were passed unanimously.

It was announced that the annual meeting in 1959 would be held in Washington, D.C., on December 28, 29, and 30. Headquarters will be the Sheraton Park Hotel.

The Secretary-Treasurer presented the results of the election for new officers. They are as follows: President, James J. O'Leary; Vice-President, Paul M. Van Arsdell; Director of Business Finance, Bion B. Howard; Director of Investments, Jules I. Bogen; Director of Money and Banking, Marcus Nadler; Director of International Finance, Miroslav Kriz.

President Chandler introduced the new president, James J. O'Leary. President

O'Leary thanked the members for honoring him by the presidency and asked for a standing vote of thanks for the retiring President. He also asked for a standing vote of thanks for the Editor and the Secretary-Treasurer. A resolution was introduced and approved that the retiring President write appropriate letters to the University of Chicago and New York University, thanking the universities for the services of the Editor and Secretary-Treasurer.

There being no further business, the meeting was adjourned at 5:30 P.M.

MINUTES OF THE BOARD OF DIRECTORS MEETING (SPECIAL MEETING) DECEMBER 28, 1958

This meeting was brought to order by President O'Leary at 5:30 P.M. Since this was a special meeting, there were no previous minutes for discussion.

The following officers and directors were present: Mrs. Daniel, Messrs. Van Arsdell, Ketchum, Chandler, Howard, Segall, and Hassett.

It was approved that the American Finance Association meet with the American Economic Association at St. Louis in December, 1961.

The Board of Directors resolved that President O'Leary should appoint an appropriate committee to review the problem of alternation of disciplines to be presented in the sequence of annual programs.

The Secretary-Treasurer was instructed to discuss with Secretary Bell of the American Economic Association the appointment of a joint chairman to serve for both the American Economic Association and the American Finance Association for the meetings in Washington, D.C.

There was some discussion concerning the replacement of Carl Dauten as Associate Editor. Professor Dauten had requested to be relieved of his post. Several names were introduced, but no selection was made.

The new budget as approved by the outgoing board was presented and accepted.

There being no further business, the meeting was adjourned at 5:44 P.M.

Respecfully submitted,

GEORGE E. HASSETT, JR.
Secretary-Treasurer

CARL A. DAUTEN has resigned his post as associate editor of the *Journal of Finance*. JOHN G. GURLEY has been appointed to the associate editorship.